

**War, Epidemics and Medicine in the Late Ottoman Empire  
(1912-1918)**

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By Oya Dağlar

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# War, Epidemics and Medicine in the Late Ottoman Empire (1912-1918)

*Oya Dağlar*



Türkistan ve Azerbaycan Araştırma Merkezi  
Turkestan and Azerbaijan Research Centre



*To my family*



## INTRODUCTION

Wars can be counted as the first among many reasons that trigger the epidemics. This is mainly due the fact that it is both difficult to maintain proper hygiene in armies on the move during wars and living conditions of the civilians are impaired since wars damage the economic balance. Increase in epidemics is therefore inevitable under the circumstances formed by wars. Some epidemic diseases, due to the unforgettable destruction they caused, are identified with certain historical periods. Leprosy and plague were the two nightmares of middle ages. When cholera is in question, we should first talk about the 19<sup>th</sup> century.

In spite of the fact that leprosy, which is accepted to have spread from marshes in India, was taken to Europe with the Roman army returning from its campaigns, it could not spread among the Romans who had the habit of washing in hot baths. Instead, it spread within the environment of famine and various invasions, which ruined Europe after the Roman Empire collapsed. Crusades and wars caused leprosy to settle in Europe. Some researchers claim that smallpox was also carried from Syria and Anatolia to Europe with the Crusades.

The reason for plague's, which became a dramatic and drastic epidemic in the middle of the 14<sup>th</sup> century, taking hold of Europe was also a war. When plague was seen in the army of Tatars after they besieged the Castle of Kefe, which was under the dominance of the Genoese at that time, the Tatars, losing their power to fight, threw the bodies of those who died of plague with catapults to the Castle of Kefe. The Genoese, who gained the upper hand against the Tatars, could not show the same heroism against the plague. After the whole castle was infected, they boarded their vessels and sailed for the Mediterranean. When they arrived at Italy after infecting every port they called, they started the disaster that would eventually surround Europe. The Black Death, which reached Italy in the spring of 1348 and France, Spain and England short after, caused mass destruction in Europe by wiping out one third of the whole population in one year.

Syphilis, which was increasingly seen among the Italian, French and Spanish military units during the siege of Naples (1495) and speedily spread, terrorised Europe in the 16<sup>th</sup> century.

At the beginning of the 19<sup>th</sup> century, mankind encountered a new trouble. Cholera that started in India and first spread to Asia and Africa and then to Europe, America and Australia caused pandemics which killed thousands of

people. With industrialisation that started in this century, settlement conditions of cities became worse due to the increase in population caused by workers coming from rural areas. With the introduction of steam vessels and train, faster traffic between cities and countries caused an increase in the spreading speed of cholera and cholera was started to be identified with death. With the discovery of vibrio cholerae after 1883, under which conditions the disease spread, how it settled in a place, its prophylaxis, epidemiology and what should be done to fight with this disease were understood and declared. After that time, cholera outbreaks started to diminish in Europe.

The Ottoman Empire, which hosted international transportation and commercial routes due to its intercontinental position and owned the holy lands of monotheistic religions, was affected from all cholera pandemics except for the first one because of people who came from cholera-infected regions of Far East to become pilgrims and living conditions that were far from hygiene in Hedjaz. The adventure of cholera in the Ottoman Empire started in 1831 and continued until the Republican era with differing intensity and intervals. During the last cholera pandemic, which started in 1902 and lasted until 1923, the Ottoman Empire entered and fought in Tripoli War (1911), 1<sup>st</sup> and 2<sup>nd</sup> Balkan Wars (1912-1913) and the 1<sup>st</sup> World War (1914-1918). In these wars, which followed one another, military defeats, heavy war conditions and insufficient health services fostered cholera outbreaks.

When the army, defeated in Balkan Wars, started to retreat to Çatalca in a scattered manner and under miserable conditions, cholera carrier soldiers coming from the Anatolia and Syria caused a cholera outbreak. Sick soldiers were transferred to Istanbul by trains in order to prevent spread of cholera, which was first seen in Çatalca. Thousands of cholera patients, who were left in Gülhane Park and Sarayburnu every day, caused the disaster to grow. Retreat of the army in a scattered manner spread panic among the civilians. 40-50.000 sick immigrants who were in need of medical care, arrived at Istanbul within a couple of days with the soldiers and caused a major congestion in the city. It was not long before contagious diseases like cholera, dysentery and smallpox were started to be seen among these immigrants who were forced to share the same environment with the sick soldiers. These diseases spread all over the country with crowded immigrant groups and killed many people. Egyptian, Indian, English, Romanian, German, Austria-Hungarian, Belgian, Swedish, Swiss, Russian, American, Dutch and French Red Cross Societies treated the sick and the injured in the hospitals they opened in various parts of Istanbul until the end of the war.

The Ottoman Empire entered the 1<sup>st</sup> World War all of a sudden before the wounds of the Balkan Wars were dressed or the necessary preparations were

made. Hygienic insufficiencies and medical impossibilities hit Caucasian and Çanakkale fronts this time. Relapsing fever and typhus killed those who survived frost and hunger in Caucasian front. Other than this, those sent to another climate due to disease and those who deserted their units and mixed up with the public played a major role in dissemination of the disease. Ovens were used to disinfect clothes in struggle against the lice and practical solutions like steam boxes were found. Nevertheless, dysentery and cholera added to the typhus made the situation even worse. Dysentery, malaria, typhus and cholera dominated the Çanakkale front, where the most brutal battles were fought, throughout the war.

This book examines the relationship between the wars and health in respect of the epidemics during the Balkan Wars and the 1<sup>st</sup> World War, which are accepted as the beginning of the end for the Ottoman Empire, based on archive documents, almost all of which are being used for the first time. All military and civil precautions in the struggle against these diseases, which spread from the battle fields to Istanbul and Anatolia and caused epidemics and affected the outcome of the wars directly by greatly reducing the strength of the Ottoman Empire, are handled in detail. In this book, which touches the relationship between the wars and health upon these two wars, you may witness how the epidemics weakened and eventually destroyed the political power of the Ottomans but at the same time how the medical theories and practises being applied at that time were tried to be modernised based on the experiences obtained during the wars.

Whilst reading how the epidemics killed the civilians during the 1<sup>st</sup> World War, it pains us to hear that the cholera news coming especially from Kirkuk and Sulaimaniya in Iraq have been recently verified by World Health Organisation. The mission of this book, which is to act as a bridge between our past and present by telling how the wars have paved the way for the epidemics based on the experience of the Ottoman Empire, clearly increases its importance.

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September 20, 2007



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## ABBREVIATIONS

- ATASE : Presidency of Military History and Strategic Studies  
(*Askeri Tarih ve Stratejik Etüt Başkanlığı*)
- ANZAC : Australian and New Zealand Army Corps
- BEO : the Document Archive of the Sublime Porte (*Bâb-ı Âli Evrak Odası Defterleri*) (incoming and outgoing documents)
- BOA : the Prime Ministry Ottoman Archives in Istanbul  
(*Başbakanlık Osmanlı Arşivi*)
- CUP : The Committee of Union and Progress
- DH.İD : The Administration Office of the Ministry of the Interior  
(*Dahiliye Nezareti İdare Kalemî*)
- DH. EUM. THR. : The Official Documents Office of the National Security  
Department of the Ministry of the Interior (*Dahiliye  
Nezareti Emniyet-i Umumiye Tahrirat Kalemî*)
- MU. SIH. : The Minutes of the High Quarantine Assembly (*Meclis-i  
Umur-ı Sıhhiye Mazbataları*)
- MV. : Cabinet Minutes (*Meclis-i Vükelâ Mazbataları*)
- OHAM : Magazine of the Red Crescent Society (*Osmanlı Hilal-i  
Ahmer Mecmuası*)
- TSK :History of the Turkish Armed Forces (*Türk Silahlı Kuvvetler  
Tarihi*)



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## INTRODUCTION

“Triumphant parties of the old wars were not always the armies with the best commanders or weapons, but most of the time those who were carrying the nastiest microbes to disseminate to their enemies.”

Jared Diamond

(from his book *Guns, Germs and Steel*)

The economic, political and cultural results of big pandemics<sup>1</sup> that have appeared during the historical development process oblige us to evaluate them on the historical level. Epidemics in various periods throughout the history have caused the deaths of millions of people and thus have become indelibly marked in the human psyche. For instance, leprosy marked the Middle Ages, the bubonic plague spread in the fourteenth century from Central Asia to the south and west at an incredible speed and devastated populations around the globe, killing an estimated sixty million people. This epidemic, which started from Central Asia between the years of 1338-1339 and was called by the Europeans as the “Black Death,” moved to India and China on one side and to Crimea and Caucasia by going around the Caspian Sea both from the north and the south on the other side, arriving in Istanbul and Anatolia in 1347. Within a year it reached Egypt, Syria, Sicily, North Africa and continental Europe.<sup>2</sup> Black Death, especially during the period it reigned in Europe, 1346-1350, destroyed one third of its population and left indelible marks. On the other hand, Michael Dols, who examined the destruction of the plague in the Middle East, reports that approximately 1,000-1,200 people were recorded as dead every day in Cairo in 1348.<sup>3</sup> The plague not only caused demographic

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<sup>1</sup> Pandemic: Epidemic over a wide geographical area.

<sup>2</sup> Michael W. Dols, *The Black Death in the Middle East* (Princeton: Princeton University Press, 1977), pp. 42-43.

<sup>3</sup> Dols, pp. 208-209.

trauma but also gave rise to social and economic maladies in both Europe and the Middle East.

In the sixteenth century, syphilis replaced plague, spreading throughout the world by European travelers. This disease, which was recorded to cause the body to be covered with spots from the head to knees, the face to shed flesh in pieces and to result in death within a couple of months, was far more virulent than it is today and therefore the worst natural disaster of the century.

Cholera, which appeared in India in 1768, spread throughout the world along the trade routes in the eighteenth century. However, it made its biggest impact with four big pandemics in the nineteenth century. This disease, seen in India between 1811-1817, turned into an epidemic in 1826 and spread to Russia in 1829 and China in 1831 and then on to Germany, Britain, Ottoman Empire and Africa in west. After the disease was seen in the U.S. in New York and Canada in 1832, it became prevalent throughout the continent. It is estimated that twenty-five million people lost their lives during this first pandemic. The second cholera pandemic, which also originated in India, took place in the years of 1840-1862 and resulted in the deaths of at least one million people. Cholera caused two more big pandemics in the second half of the nineteenth century, between 1863-1875 and 1883-1894, with devastating results. In addition to these pandemics, typhus, typhoid fever, pneumonia, smallpox and tuberculosis marked their names on the history of the human race with the mass deaths to which they gave rise.<sup>4</sup>

Lack of knowledge on the causes of the diseases as well as their treatment played major roles in their destructive capabilities. Before discovery of the microorganisms that are the agents causing these diseases, people considered diseases, the reasons for which were mysterious to them, as penalties inflicted by God. Traditional treatment methods depended on witchcraft and mixtures of curing herbs. The common points of these approaches, which showed many differences in accordance with the belief systems, were that the diseases possessed supernatural characteristics and that they were unavoidable. Besides the traditional medicine, a theory called "miasma," dating back to Hippocrates, was prevalent in both Europe and

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<sup>4</sup> LaVerne Kuhnke, *Lives at Risk, Public Health in Nineteenth Century Egypt* (Cairo: The American University in Cairo Press, 1992), p. 1.

the Eastern World in the sixteenth century. According to this theory, toxic agents created by the decay of the corpses and other materials underground caused the epidemic diseases.

Besides the religious and traditional beliefs, the experience gained due to the repeating epidemics resulted in application of some new methods with the help of reasoning from analogies. The fact that the epidemics proved themselves to be intercontinental threats as of commerce between the Far East and Europe became regular especially deserved attention. Therefore it was decided that international movements should be taken under control and the method of "quarantine" which enabled isolation of persons who contracted the disease and their commodities and supervision of the epidemics. The fact that these precautions limited the spread of the epidemics if they were not stopping them helped the acceptance of their application in Mediterranean and European countries as 14<sup>th</sup> century. It was seen that as of the end of 16<sup>th</sup> century, quarantine methods gained more weight in spite of the reactions given with commercial concerns. The 1720 Marseilles plague played a major role in the acceptance of quarantine applications throughout Europe. The disease that spread from the port cities to inland France and the Netherlands made these arrangements obligatory. With the help of the aforementioned precautions, plague abandoned Western Europe at the end of the seventeenth century and was not seen in North or Middle Europe in 1718, either. Nevertheless, a century more had to pass before it left the Ottoman Empire.<sup>5</sup>

In quarantine, strict control of passengers, pack animals and commodities that were known to have arrived from an area where an epidemic had been seen or those arousing the suspicion of a disease was in question. Generally, passengers were kept waiting at the quarantine stations established at the land boundaries or ports and allowed to continue their voyages after a while if no disease was observed. After the discovery of the microorganisms, whilst the passengers were waiting for the end of their quarantine period, they were having bath and being disinfected. Furthermore, their clothes and animals, all kinds of personal and commercial commodity were disinfected by being washed up, fumigated or treated with high pressure vapor, as per their characteristics.

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<sup>5</sup> Daniel Panzac, *Osmanlı İmparatorluğu'nda Veba (1700-1850)*, trans. Serap Yılmaz (Istanbul: Tarih Vakfı Yurt Yayınları, 1997), p.2.

The main developments in modern medicine both biologically and institutionally took place in the nineteenth century. In this century, the “miasma theory” left its place to “germ theory”, which claimed that microorganisms that settled in the body caused certain diseases. Pasteur’s demonstration that each sort of fermentation is linked to the existence of a specific microorganism and that each fermentation takes place from unique yeast was followed by his discovery of anaerobiosis, microorganisms that do not need air to survive. Pasteur, who put forth that the microorganisms do not duplicate by themselves (1862), thought that epidemic diseases resulted from microorganisms, as in the case of fermentation. Joseph Lister used phenol against the microbes in the air in order to prevent stinking and rotting in the bone fractures and made a considerable contribution to surgery (1867). Robert Koch discovered that a particular bacteria cause anthrax (1876). Later on, Pasteur proved for certain that the agent of anthrax seen in sheep is the anthrax bacillus (1877). He also discovered that the bacteria known as streptococcus today cause puerperal fever. He dedicated himself to prove that microorganisms cause epidemic diseases and spread of infections in surgery. Robert Koch defined the microorganisms that function as the agents of tuberculosis and cholera in 1880’s. These were followed by the identification of the bacillus of diphtheria in 1883 and of typhoid fever in 1896. World of science, upon accepting the existence of microorganisms after severe discussions, initiated the studies in order to destroy the microorganisms and to prevent the damages they give rise to.<sup>6</sup>

The science of epidemiology, which was born with the efforts of the Pasteur Institute in the twentieth century, revolutionized the branch of epidemic diseases, making it possible to stop these diseases, which were once the worst nightmares of all.<sup>7</sup>

In the Ottoman Empire, as in the rest of the world, epidemic diseases were at the top of the list of disasters. These diseases, striking periodically, shook the Empire, considerably decreasing its population, leaving towns and cities deserted, and causing recessions in agriculture and trade and deaths by famine. Epidemic diseases also affected the diplomatic and commercial affairs of the Empire with the Western world directly. Since the

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<sup>6</sup> Nuran Yıldırım: “Tersane-i Âmire Fabrikalarında Tebhir Makinası/ Etüv Üretimi ve Kullanımı”, in *Dünü ve Bugünü ile Haliç. Sempozyum Bildirileri. May 22-23 2003* (Ed. Süleyman F. Göncüoğlu). (Istanbul: Kadir Has Üniversitesi Yayınları, 2004) pp. 421-431.

<sup>7</sup> Panzac, p.2

traditional medical theories and religious attitudes were dominant in society up until the nineteenth century, it was not possible to put an end to the outbreaks. Since the diseases were usually accepted as the wrath of God and taking precautions against the same was regarded as rebellion against the Almighty, no action was taken against diseases until the beginning of the nineteenth century. In the plague epidemic of 1820, the officers on duty outside the walls of Istanbul only counted the coffins being carried out and the “*Sûre-i Ahkaf*” (prayer) was read aloud from the minarets of the mosques after the last call for prayers.<sup>8</sup> Desperation in the face of disease either caused a total devotion to religion or large revolts against all values and beliefs, sometimes leading directly to mutinies among the population.

In the nineteenth and twentieth centuries, many epidemic diseases, especially cholera, plague and typhus, were seen in the Ottoman Empire. Ironically, these diseases brought both many disasters and obligatorily modern medicine into the Empire.

The School of Medicine (*Tıphane-i Âmire*) founded in 1827 in order to meet the needs of the newly-established armed forces organization during the reign of Mahmut II is regarded to have been the pioneer of modern medicine and liberal thinking in the Empire. It should be noted that in the attempts to establish a school of modern medicine and in modernization of the medicine, like in many other areas, military concerns were kept in the foreground. It is in fact possible to follow these endeavors of reform in the military area, which led to a stronger and more modern army, to the reign of Ahmet III. The opening of schools like the School of Engineering (*Hendesehâne*), which offered curricula of modern western knowledge, took place in this era. These schools, which were opened out of the organization of *medrese* yet different from them, introduced Western science to the Empire. These attempts at reform in the Tulip Period continued during the reigns of Mahmut I and Mustafa III and efforts were made to reorganize some units of the army with information and technology brought from Europe. However, since these attempts of reform were short-lived and unstable, they failed to bring the desired results.

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<sup>8</sup> Nuran Yıldırım, “Tanzimat’tan Cumhuriyet’e Koruyucu Sağlık Uygulamaları,” in *Tanzimat’tan Cumhuriyet’e Türkiye Ansiklopedisi*, vol. 5 (Istanbul: İletişim Yayınları, 1985), p. 1320.

It can be said that the reign of Mahmut II is the era when the efforts at modernization really succeeded and gained continuity. The most remarkable feature of the period was the endeavor to create "a centralist bureaucracy under the absolute sovereignty of the sultan". The cooperation of religion, the bureaucracy and the armed forces was needed in order to establish this political order of "absolute monarchy of the intelligentsia," as Niyazi Berkes calls it, and therefore the attempts at reform were focused thereon. It is seen that in order to realize this aim, three assemblies representing the power of the sultan were established in the place of the Assembly of Council (*Meşveret Meclisi*). In these assemblies, the Governmental Council (*Dar-ı Şura-yı Bab-ı Ali*), the Supreme Board of Justice (*Meclis-i Ahkam-ı Adliye*) and the Military Council (*Dar-ı Şura-yı Askeri*), the Sultan received the strong support of the bureaucracy-intelligentsia and the army. The aim of these three assemblies was to prepare the New Order (*Nizam-ı Esasiye*) that Mahmut II had in mind.<sup>9</sup>

Another reform attempt of the Mahmut II era in order to establish the approach of the intelligentsia-absolute state was in the military area. For this purpose, the traditional organization of the Janissaries, which defied the central power, was abolished in 1826 and a modern army, which was commanded by the central power, was established in its place. Since the strengthening of this army was deemed as a necessity for the continuation of the political dominance of the Sultan and of the Empire, the efforts of modernization were directed at the armed forces.

It was known that a healthy human force was needed above all in order to reorganize the armed forces in a planned way. As it was not possible to have this healthy human force without accurate vital statistics, it was decided to determine the exact number of Muslims who could serve in the army. The issue was attended to by the Governmental Council (*Dar-ı Şura-yı Bab-ı Ali*) and the first modern census of the population of the Ottoman Empire was taken in the years of 1828-1829. Mahmut II, aware of the fact that this was the only way of determining those suitable for military service and for taxpaying, emphasized that the census taking should be undertaken with "care and due diligence," especially in Rumelia and Anatolia. This was the thought underlying the establishment of the Ministry of Vital Statistics (*Ceride-i Nüfus Nezareti*) within the body of Ministry of the

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<sup>9</sup> Niyazi Berkes, *Türkiye'de Çağdaşlaşma* (Istanbul: Doğu-Batı Yayınları, 1978), p. 168.

Interior (*Dahiliye Nezareti*), where birth and death certificates were kept regularly in the 1830's.<sup>10</sup> Another arrangement made for the reorganization of the armed forces was the establishment of a modern school of medicine.

As indicated above, one of the reasons for the establishment of the School of Medicine (*Tıphane-i Âmire*) was to meet the demands for physicians in the new army. With the establishment of this school, both an important step was taken towards the sanitary organization of the army and an institution that would assume the leading role in the westernization movements arose. As early as 1730, Claude Alexandre Comte de Bonneval, (1645-1747) who was invited from abroad for the modernization of the army, recommended that sanitary companies be established in a modern army.<sup>11</sup> A hospital was established in Üsküdar for the regiments stationed in the era of the New Order (*Nizam-ı Cedit*) in 1800.<sup>12</sup> Furthermore, during the reign of Selim III, a modern school of medicine and a teaching hospital was opened in the state shipyard (*Tersane-i Âmire*) by the physician-in-chief Mustafa Behçet Efendi in 1805 and this school remained active until a fire in 1822.<sup>13</sup> However, despite these developments, one cannot say that a modern awareness in the area of medicine towards the preservation of the overall health of the army was prevalent in the Empire. The reforms were mostly oriented to military discipline and techniques.

Upon the establishment of the School of Medicine, (*Tıphane-i Âmire*) modern medical education started in the Empire. Subsequently, a School for Surgeons (*Cerrahhane-i Mamure*) was opened in 1828 in order to train specialized surgeons for the army. Afterwards, these two schools were combined as one in 1838 and reorganized in 1839 and continued education under the name of Imperial School of Medicine of Mahmut, II (*Mekteb-i Tıbbiye-i Adliye-i Şahane*) when a young professor of medicine named Karl Ambroso Bernard (1808-1844) was invited from Vienna.<sup>14</sup>

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<sup>10</sup> Kemal Karpat, *Osmanlı Nüfusu (1830-1914) Demografik ve Sosyal Özellikleri* (Istanbul: Tarih Vakfı Yurt Yayınları, 2003), p. 70.

<sup>11</sup> *ibid.*, p. 67.

<sup>12</sup> *ibid.*, p. 94.

<sup>13</sup> Adnan Ataç, "Askeri Tıp Tarihi," in *Osmanlı Ansiklopedisi*, vol. 8 (Istanbul: 1994), p. 567.

<sup>14</sup> The expression "Adliye" in the name of the school is the pseudonym of Mahmut, II he used in his poems, which is an indicator of the fact that the school was opened

Mustafa Behçet Efendi, appointed as the physician-in-chief for the third time, made major contributions to the establishment of the School of Medicine (*Tıphane-i Âmire*). Aware of the importance of military medicine, Mustafa Behçet Efendi strongly defended the modern medicine applications against the epidemic diseases that threatened the overall health of the soldiers. In a letter presented to the Sultan for the inauguration of the State School of Medicine (*Tıphane-i Âmire*) on December 23, 1826, he strongly emphasized that "soldiers of the Restored form of Janissary (*Asakir-i Mansure-i Muhammediye*)<sup>15</sup> and of other military units, the wounded and the sick should be treated and cured based on medical methods both in war and in peace."<sup>16</sup>

Before the modern medicine education, which was initiated solely with military concerns, reached the age of four, the Empire was struck by the cholera pandemic of 1826, which first reached the Eastern Mediterranean coasts and densely populated areas like Alexandria, Cyprus and Syria in 1831 and then arrived in Istanbul and caused many deaths.<sup>17</sup> Against this serious threat, the first quarantine arrangements were made in the Empire upon the admonition of Physician-in-Chief Mustafa Behçet Efendi<sup>18</sup>; ships arriving from the Black Sea underwent quarantine in İstinye, whereas those arriving from the Mediterranean underwent the same procedure in Büyükliman.<sup>19</sup> The plague spread in Istanbul in the year of 1836

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during his reign. This name became obsolete in time. Nuran Yıldırım, "Tıphane-i Âmire", in *İstanbul Ansiklopedisi*, vol. 7, (Istanbul: Kültür Bakanlığı ve Tarih Vakfı, 1994), p. 264-265

<sup>15</sup> The name of the new army founded by Mahmut II after he abolished the Janissary in 1826.

<sup>16</sup> Ataç, p. 567.

<sup>17</sup> Cholera caused epidemics of different aggravation levels in the Ottoman Empire between 1847-1848, 1865-1867, 1871-1872, 1893, and 1907-1915. For more detailed information, see Yıldırım, pp. 1320-1338.

<sup>18</sup> Mustafa Behçet Efendi (1774-1834). Physician-in-chief of the Ottoman Empire three times between 1803-1807, 1816-1821 and 1823-1834. He assumed a leading role in the initiation of modern medicine applications in the Ottoman Empire and he became the founder, first director and professor of the School of Medicine and School for Surgeons. He was one of the pioneers of the establishment of the Quarantine Department. He received the title of professor in the year of 1791 and was promoted to the Ministry of Justice of Rumelia (*Rumeli Kazaskeri*). Bedi N. Şehsuvaroğlu, *Türkiye Karantina Tarihine Giriş 2* (Istanbul: İsmail Akgün Matbaası, 1958), pp.601-602. For more detailed information, see Feridun Nafiz Uzluk, *Hekimbaşı Mustafa Behçet* (Ankara: Ankara Üniversitesi Tıp Fakültesi Yayınları, 1988).

<sup>19</sup> Yıldırım, p. 1326

compounded the already existent danger. During this spread, in which 20.000 – 30.000 died, Kızkulesi in Üsküdar was turned into a plague hospital and was allocated for the treatment of privates. The petition written by the French physician Antuvan Logo, who was commissioned in this hospital to take part in the application of quarantine in 1838, on the quarantine applications was effective in the establishment of the Quarantine Assembly/ High Quarantine Assembly (*Meclis-i Tahaffuz/Meclis-i Umur-ı Sıhhiye*). This organization was important in that it constituted the beginning of the developments in the preservation of the overall health of society, for quarantine, one of the protective health applications, included precautions for the preservation of the health of both the armed forces and the public. However, the establishment of this organization was not easy for the Sultan or the government. Since it was thought that such an innovation might provoke the opposition and intervention of the religious fundamentalists and lead to serious problems, the Sultan tried to base the quarantine on the rules of Islam. For this purpose, a religious justice assembly was established in the palace and after lengthy discussions, plague was accepted as an epidemic disease and an order based on the rules of Islam was issued for the establishment of the institution. Subsequent to this approval, the Governmental Council (*Dar-ı Şura-yı Bab-ı Ali*) and the Supreme Board of Justice (*Meclis-i Ahkam-ı Adliye*) were united and the efforts for the establishment of the institution were initiated. This incident marked a major step in the collapse of the traditional way of thinking about epidemic diseases in the Empire.<sup>20</sup> As such, the developments in modern medicine were closely followed-up until the collapse of the Empire and all new innovations in the areas of bacteriology and virology were started to be applied within the borders of the Sublime Porte almost simultaneously with the rest of the world. For instance, in 1886, some of the professors of the Imperial Medical Society (*Mekteb-i Tıbbiye-i Şahane*) were sent to Paris in order to learn about Pasteur's rabies vaccine, which had been administered to humans for the first time in 1885. The sultan of the era, Abdülhamit II, awarded Pasteur with the order of *mecidiye* first class (an order granted within the era of Abdülhamit) due to his successful studies and donated 10,000 French francs to the establishment of the Pasteur Institute in Paris. After these physicians returned after an education of six months, the first

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<sup>20</sup> The public attitude towards epidemic diseases was of a religious nature in the Empire. The diseases were accepted as the wisdom of God and therefore preservation against them was regarded as a big sin. Osman Şevki Uludağ, "Son Kapitülasyonlardan Biri Karantina", *Belleten* 5-6, vol. 2 (April 1938), p. 445.

Rabies Treatment Center (*Da-ül-kelp Ameliyathanesi*) was established in 1887. Afterwards, the Imperial Vaccine Laboratory (*Telkihane-i Şahane*) where the smallpox vaccine was produced and administered was put into service in Istanbul in 1892. This was followed by the Imperial Bacteriology Laboratory (*Bakteriyolojihane-i Şahane*) in 1894.<sup>21</sup>

The most important benefit of these innovations in the area of medicine to the Sublime Porte during the nineteenth century was the success in the struggle against epidemic diseases and the subsequent decrease in the death rates. The population of Istanbul, which was 375,000 in 1830, increased to 900,000 in 1890 and then to 1,125,000 in 1912.<sup>22</sup> However, wars, coming one after another, and mass migrations seen as a result of the same in the nineteenth and early twentieth centuries resulted in the emergence of epidemic diseases as a serious threat and a major decrease in the population of the Empire.

### *Wars and Epidemic Diseases*

When the history of the world is evaluated generally, it is easily acknowledged that mass movements like war, migrations and trade have played major roles in the emergence of epidemic diseases. The inability to ensure the conditions of hygiene and the inadequacy of health services due to war have always facilitated the preparation of the necessary bases for the diseases. For instance, since sterile wound dressing were not available during the Russo-Japanese War and the Balkan Wars, the wounds became infected and many soldiers lost their lives. A similar situation arose during the 1859 Italian-Austrian War. During this war, in the Army of Sardinia, whereas those who died from war wounds numbered sixteen, the total number of men who died from diseases was 2,182. Napoleon in the letter he wrote to Eugene on March 14, 1809, indicated that the diseases were far more compelling and intimidating than the Austrians.<sup>23</sup> Nevertheless, it would be wrong to think this as a condition unique to the nineteenth century, for the highest number of

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<sup>21</sup> Ekrem Kadri Unat, *Osmanlı İmparatorluğu'nda Bakterioloji ve Viroloji* (Istanbul: İstanbul Üniversitesi Yayınları, 1970), pp. 17-49.

<sup>22</sup> Charles Issawi, *The Economic History of Turkey 1800-1914* (Chicago: University of Chicago Press, 1980), p. 34.

<sup>23</sup> Samuel Dumas, "Various Influences upon The Loss of Life," in *Losses Of Life Caused by War*, ed. Harald Westergaard (Oxford: At the Clarendon Press, 1923), p. 99.

deaths due to epidemic diseases was seen during the First World War and soon afterwards. During this war, which lasted for four years, the military forces lost eleven million men, eight million due to war wounds and the remainder to diseases.<sup>24</sup>

Diseases were also a total calamity for the civilians of the combatant countries. Notwithstanding the fact that the exact numbers are not known, more than 600,000 in Italy and approximately 250 million in Britain and France lost their lives due to various epidemic diseases. The number of civilian deaths in Germany was more than 700,000. Furthermore, the Spanish influenza of 1918, which emerged as a natural result of the war, increased the number of casualties considerably. Even when the war ended at the front, the horror created by the diseases continued. According to the official records, approximately 100,000 lost their lives in Britain and Wales due to influenza, and almost the same number of people lost their lives in France from the same cause. The number of casualties due to influenza in Italy was 300,000. Even, despite the geographical distance, the rate of death in New Zealand was ten per thousand in 1917 and to fifteen per thousand in 1918.<sup>25</sup>

Likewise in the Ottoman Empire, wars triggered factors of epidemic diseases and more soldiers lost their lives due to epidemic diseases than those who died while fighting. For example, even though there are no exact figures due to lack of proper statistics taken during the Crimean War of 1854-1855, it is estimated that the losses of the Ottoman Empire due to diseases were more than 85,000.<sup>26</sup> This figure is a clear indication that most of the soldiers lost their lives due to diseases and lack of proper medical help, not during combat. The same picture emerged during the Ottoman-Russo War of 1877-1878. The number of Ottoman soldiers who died from typhus is estimated to have been almost 40,000.<sup>27</sup> The 1897 Ottoman-Greek War was another disaster experienced due to lack of medical aid. According

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<sup>24</sup> Fielding H. Garrison, *Notes on the History of Military Medicine* (Washington: Association of Military Surgeons, 1922), p. 200.

<sup>25</sup> K.O. Vedel Petersen, "The World War," *Notes on the History of Military Medicine*. (Washington: Association of Military Surgeons, 1922), pp.133-134.

<sup>26</sup> Kemal Özbay, *Türk Asker Hekimliği Tarihi ve Asker Hastaneleri*, vol. 1 (Istanbul: Yörük Basımevi, 1976), p. 41.

<sup>27</sup> Yıldırım, p. 1327.

to the official figures of the Ministry of War (*Harbiye Nezareti*) in contrast to 2,000 deaths due to bullet wounds within forty-five days, 38,000 Turkish soldiers lost their lives from various diseases.<sup>28</sup> Apart from the soldiers, many civilians also lost their lives when they were forced to leave their homes and migrate to far away lands. The absence of modern medicine and military sanitary organization played a great part in these results; inevitably, all eyes were turned to the Military School of Medicine.

The Military School of Medicine, (*Mekteb-i Tıbbiye-i Adliye-i Şahane*) which had been established entirely on the western style and provided education on modern medicine methods, graduated its first students with an examination that took place in the presence of the Sultan on September 20, 1843. However, it is not possible to say that courses given on military medicine or military education were sufficient until the Second Constitutional Period (*Meşrutiyet*). Although the students began to be trained in Military Hospital of Haydarpaşa as of 1870, it was evident that the training given was not in harmony with the conditions of the modern medicine. The students who graduated from the school were appointed with the rank of captain, but their knowledge of army procedures was not sufficient. Wars, coming one after another, clearly revealed the inefficiency of the Ottoman army on medical services. The evaluations made after the Crimean, Ottoman-Russo and Ottoman-Greek Wars underlined the fact that the Military School of Medicine was far from providing an education fit to its purpose of establishment. Therefore, Gülhane Training School and Clinic Hospital (*Gülhane Tatbikat Mektebi ve Seririyat Hastanesi*) (today Gülhane Medical Military Academy) curriculum of which was prepared by Prof. Dr. Robert Rieder and Dr. Georg Deycke, who had been invited from Germany, by taking the military health into consideration, was established in 1898 in order to enable the students who graduated from the Military School of Medicine to gain more information on military medicine. From this date on, it was deemed obligatory that those who graduated from the Military School of Medicine should work as practitioners in this hospital for a period of two years. As of the declaration of the Constitutional Period, the training of the students of the Military School of Medicine on both the military system and military medicine began to be discussed again. With modifications made in the curriculum and the efforts of Dr. Wieting Pasha, Director of Gülhane,

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<sup>28</sup> Presidency of Military History and Strategic Studies (ATASE), Class no. 2213, D no. 48, F. (1-20)

courses on sanitary services in the army in peace and wartime and military surgery started to be given.<sup>29</sup>

It was stipulated that the aforementioned arrangements of the authorities of the Constitutional Period would be executed in cooperation with the innovations initiated in the army. When the damages inflicted on the soldiers by diseases were taken into account, it could be seen clearly how the war-making capability of the army was weakened. Therefore, while efforts were made to structure the sanitary units of the army in an attempt to develop the logistic services within the army, some arrangements were introduced in the School of Medicine for the training of the personnel that would provide the said services. However, this projected structure of the army could not be realized due to financial difficulties. The Empire entered into both Balkan Wars and the First World War with these major medical deficiencies. The result was a serious population and workforce loss in both military and civil terms and an economic, political and social disaster created by the same.

### *Studies in the History of Epidemic Diseases*

When the efforts that have been made in writing the history of the epidemic diseases are taken into consideration, we encounter four different approaches. One of them depends on the idea that epidemic diseases have played a major role in the destruction of civilizations and the collapse of empires throughout the history of mankind. One of the most important studies made in this regard is *Plagues and Peoples*<sup>30</sup> by William McNeill. McNeill puts forth that epidemic diseases should not be regarded narrowly as mere biological facts, but as important factors that have marked the eras of humanity and emphasized the importance of smallpox during the discovery of America. He focuses on the idea that in the colonization of America, smallpox played an important part besides the physical pressure and violence used by the Spanish and that the Inca and Aztec civilizations underwent enormous demographic collapses due to this disease. Since

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<sup>29</sup> For more information on Gülhane, see Tefvik Sağlam, *Gülhane* (Istanbul: n.p., 1925); İrfan Titiz: *Gülhane İç Hastalıkları Klinikleri Tarihi (1898-1953)* (Ankara: n.p., 1960)., Tefvik Sağlam, “Gülhane Tarihçesinden Bir Kısım”, *Tıp Tarihi Araştırmaları* 3 (1898), pp. 74-91., Adnan Ataç: *Gülhane Askeri Tıp Akademisinin Kuruluşu*. (Ankara: GATA Yayınevi, 1996).

<sup>30</sup> William H. McNeill, *Plagues and Peoples* (New York: Anchor Press, 1977).

members of these societies had not developed immunity to this disease, they lost ninety percent of their populations and therefore collapsed.

This approach can also be seen in *The Black Death in the Middle East* by Michael Dols. Dols puts forth that the plague epidemic in the Middle East in 1347 caused serious casualties. Between one-fourth and one-third of the population of Egypt died which threw the Memluks, the dominant power of the region into a crisis and recession and enabled the Ottoman conquest in the 1510. Furthermore, historians of the European Middle Ages discuss the plague, its historical results and its influence on demography and traditional powers in *The Black Death: A Turning Point in History?*<sup>31</sup> edited by W. Bowsky in detail. In short, this attitude emphasizes epidemic diseases as a strong determining factor in historical development and collapse.

The second basic attitude in the assessment of epidemic diseases as a historical factor relies on the opinion that epidemic diseases are the biggest reflectors of change in the social balance of power, of the emergence of class conflicts, and of deep social changes. Charles Rosenberg, in his book *Cholera Years*, focuses on the collapse of religious fundamentalism in America and its replacement with positivist thinking during the cholera epidemics of 1831, 1849 and 1866. Carlo Cipolla, in *Cristofano and the Plague* and *Faith Reason and the Plague in the Seventeenth-Century Tuscana*, examines the feelings, attitudes and behaviors towards plague of the different sections of society in seventeenth century Italy.<sup>32</sup> In this attitude, how the inner dynamics of societies differently reacted to epidemic diseases and how the affairs between the Muslim and European countries developed with the changes in the political and economic balances of power are evaluated.

The third attitude focuses on the fact that epidemic diseases have emerged in different periods of time and the social experience gained from them changed the accepted medical theories and practices. For example, the plague epidemic of the fourteenth century caused the establishment of quarantine organization, which meant the protection of the overall health of society in a systematic way. Similarly, during the big cholera epidemic in London in 1848, it was seen that the health activities of Britain gained a

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<sup>31</sup> W. Bowsky, ed., *The Black Death: A Turning Point in History?* (New York: n.p., 1971)

<sup>32</sup> Nancy Elizabeth Gallgher, *Medicine and Power in Tunisia 1780-1900* (Cambridge: Cambridge University Press, 1983).

regular structure. Roderick McGrew, one of the historians who is in favor of this approach, in *Russia and Cholera*, argues that the incidents that occurred during the cholera epidemic of 1823-1832 changed the traditional facts that had been widely accepted in Russian medicine, caused the development of unique publications on medicine and even contributed to modern Russian literature. On the other hand, Margaret Pelling, in her book *In Cholera, Fever and British Medicine, 1825-1865*, emphasizes the fact that the development of epidemiological theories in Britain caused a medical dilemma and describes its reflections.

Another attitude about the diseases, however, depends on the idea that diseases and the medical methods that may destroy the diseases are effective tools of political power and colonization. Especially in the European political colonialism that grew stronger in the nineteenth century, modern medicine became one of the modern ruling tools of the European powers. Michel Foucault is the strongest defender of the thesis on the effect of modern power forms or, in his own terms, of the methods of discipline that originate from the penetration, rearrangement and colonization capabilities.<sup>33</sup> Since the issue of health provided all of the conditions necessary for these activities, Europe took advantage of this in its colonization plans with great care and diligence.

Nancy Elisabeth Gallagher, in her book *Medicine and Power in Tunisia 1780-1900*, examines the methods of European-style medicine reform in the North Africa colonial system and how the plague, cholera and typhus epidemics seen in Tunisia in these centuries affected the social relationships between Muslims and Europe and the economic and political balance. It is possible to see the same approach in *Colonising Egypt*<sup>34</sup> by Timothy Mitchell. Mitchell examines how the military reforms started by Mehmet Ali Pasha under the name of new order (*nizam-ı cedid*) in order to strengthen his government were turned into arrangements that expanded throughout all layers of

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<sup>33</sup> Thomas Osborne, "Medicine and Epistemology: Michel Foucault and the Liberality of Clinical Reason," *Michel Foucault II, Critical Assessment*, vol. 4, ed. Barry Smart (London: Routledge, 2000), p. 252.

<sup>34</sup> Timothy Mitchell, *Colonising Egypt* (Cambridge: Cambridge University Press, 1988).

society. In the book, the reconstruction of the cities and villages, the arrangements in education, agricultural reforms, new inspections on the production-consumption cycle and regulations on hygiene and public health are presented as efforts of the government to turn individuals into political subjects who served the existence of the dominant political power. It is alleged that via these arrangements, the discipline and order established in society facilitated the control and surveillance of the overall situation in the country.

It is possible to see the opinion that modern medicine has been used as a tool to strengthen the political power in *Public Health in British India: Anglo-Indian Preventive Medicine 1859-1914*<sup>35</sup> by Mark Harrison. Harrison puts forth that medicine assumed a consolidating role of the colonial order and that Britain strengthened its colonial activities and control via imperialist medical policies in India.

A study on the efforts of the European powers to take the Ottoman Empire under their political influence and economic interests via the use of epidemic diseases in the nineteenth century is Gülden Sarıyıldız's *Hicaz Karantina Teşkilatı (1865-1914)*.<sup>36</sup> The quarantine organization, established in cooperation with the westerners for the sanitary protection of the Ottoman coasts and ports, caused the placement of those ports and coasts and all maritime activities within Ottoman waters under the control of foreign states within a short span of time. This system, which turned out to be sanitary capitulations in time, helped the foreigners to enter even the most sacred places of the Muslims, Mecca and Medina, the entrance to which was forbidden to all non-Muslims. Sarıyıldız examines in detail the efforts of the European States to continue to exist in the region as economic and political powers with the help of the quarantine department by bringing the matter of the cholera outbreak in Hedjaz onto the international platform.

LaVerne Kuhnke in *Lives at Risk, Public Health in Nineteenth Century Egypt*, adopts this attitude and explains in detail how the Ottoman governor of Egypt, Mehmet Ali Pasha, tried to strengthen his government by using European medicine in the nineteenth century. Cholera, which emerged in

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<sup>35</sup> Mark Harrison, *Public Health in British India: Anglo-Indian Preventive Medicine 1859-1914*, (Cambridge: Cambridge University Press, 1994).

<sup>36</sup> Gülden Sarıyıldız, *Hicaz Karantina Teşkilatı (1865-1914)* (Ankara: Türk Tarih Kurumu, 1996).

1831, and plague, which showed its face in 1835, caused a mass population loss in Egypt and Mehmet Ali Pasha, within the scope of the struggle against the disease, started a long-term health reform and thus tried to expand his influence to the most remote places of the country and aimed to establish a central control system. It is possible to see Mehmet Ali Pashas' manipulation of modern medicine as a political tool and the reaction of the public to these arrangements in detail in the book. In a book written by Nancy Elizabeth Gallagher, *Egypt's Other Wars, Epidemics and the Politics of the Public Health*<sup>37</sup>, how the malaria epidemic of 1942-1944, the relapsing fever epidemic of 1946 and the cholera epidemic of 1947 played major roles in the initiation of the public health efforts and the influence of British authorities therein are examined.

Two of the aforementioned attitudes have been used in preparation of this book. The first is what the destruction of the epidemic diseases has caused in the population and its influence on the weakening or collapse of the dominant political power. The second is the attitude that these epidemics and the social experience gained by them changed the widely accepted medical theories and practices of the time. These two attitudes have been examined by evaluating the epidemic diseases that emerged in major wars in the twentieth century in which the Sublime Porte participated, the Balkan Wars and the First World War. The Ottoman Empire went through five wars between the years 1911 and 1923, the Tripoli War (1911), the 1<sup>st</sup> and 2<sup>nd</sup> Balkan Wars (1912-1913), the First World War (1914-1918), and the National Independence War (1919-1923). In this time span the Ottoman Empire experienced only twenty-two months of peace. The Balkan Wars was one of the biggest devastations in terms of territory and population, whereas the First World War brought a final end to the Empire.

In the first part of this study, the major incidents of the Balkan Wars are described in brief and the epidemic diseases that emerged with the mass migration of refugees during the war are explained in the chronological order. It, however, should be noted here that in spite of the fact that many diseases appeared under the extraordinary conditions of the war, this study focuses only on the most catastrophic diseases like cholera, dysentery, smallpox and syphilis, which spread from the battle field to Istanbul and Anatolia. One of the most important points emphasized in this section is the

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<sup>37</sup> Elizabeth Gallagher, *Egypt's Other Wars, Epidemics and the Politics of Public Health* (New York: Syracuse University Press, 1990).

attitude of the state towards these developments, and the military and civil precautions taken against these epidemic diseases. When a general evaluation is made at the end of the war, it is seen that the Sublime Porte was as ineffective and ill-equipped in the area of medicine, as it was in the military area, if not more. This caused great numbers of casualties, not only from artillery or rifles, but from the epidemic diseases, thus weakening the war-making capabilities of the state and influencing the result of the war directly. Having lost one-fourth of its population by the end of the Balkan Wars, the Empire took one step closer to the end. The First World War was the one that brought the end of the Sublime Porte. The total population of the Ottoman Empire was stated as 26,000,000 at the end of the Balkan Wars (1913). It is seen that the increase of population totally stopped in 1914, the reason of which was the destruction of the First World War. McCarthy indicates that the worst demographic devastation was experienced in Anatolia during this period and that calamities like migration, epidemic diseases and famine returned together with the war.<sup>38</sup> Epidemic diseases constituted one of the main causes of this demographic devastation.

In the second part of this book, the public health and epidemic diseases in the First World War are examined comprehensively. The focal points are limited to the fronts opened in Anatolia; which include the Caucasian and Çanakkale. The scope of the diseases is determined in accordance with the format pursued in the Balkan Wars and epidemic diseases like typhus, *humma-yı racia*, cholera, dysentery and malaria that were seen at these fronts and the destruction they caused are examined in detail.

The second attitude appropriated in the book is the idea that the epidemic diseases and the social experiences gained as a result of the struggle against these diseases changed the medical theory and practices widely accepted up to that time. Modern protective medical methods, like vaccines, disinfection, cordon and quarantine, were used against the epidemic diseases that emerged with the war; foreign medical specialists were invited from abroad; and the modern health precautions that were applied during both the Balkan Wars and the First World War were enlarged in order to cover the civilians; and efforts were made to abandon

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<sup>38</sup> Justin McCarthy, *Muslims and Minorities, The Population of Ottoman Anatolia and the End of the Empire* (New York: New York University Press, 1983), p.162.

the traditional medical methods. The success attained in these applications facilitated the acceptance of these innovations.

This book has been planned as a detailed examination of wars and health with respect to epidemic diseases, which focuses on both of the war periods. The history of health is an issue rarely dealt with by historians in Turkey, but mostly has been continued with the efforts and attention of the Deontology and Medical History departments of the Faculties of Medicine. Works that deal with the health services within wars are very few since the historians do not usually keep this topic warm. Books that can be treated as the main sources in this topic are mostly those written by the soldiers. For instance, Tevfik Sağlam's book, entitled *3. Ordu'da Sıhhi Hizmet* (Sanitation Services on the Third Army) is an important source which entirely depends on war records. Tevfik Sağlam, who acted as the Chief of Medical Office of the Third Army as of 1915 during the First World War, recorded the health services provided at the Caucasian Front in military health reports, statistics and records in detail. Another work in this area is the book of Dr. Abdülkadir Lütfi (Noyan), who worked on various fronts during the Balkan Wars and the First World War, entitled *Son Harplerde Salgın Hastalıklarla Savaşım* (My Battle against Epidemic Diseases in the Last Wars). Noyan wrote about the state of health on the fronts where he worked, the struggle against the epidemic diseases and his experience in the form of a memoir. A similar work is *Bir Doktorun Harb ve Memleket Hatıraları* (A Doctor's War and Country Memoirs) by Dr. M. Derviş Kuntman. Kuntman recorded daily the events he observed and his experiences on the front, to which he was stationed. The most comprehensive work on the issue of wars and health services in the Ottoman Empire in their historical entirety is *Türk Asker Hekimliği Tarihi ve Asker Hastaneleri* (The History of Turkish Military Medicine and Medical Hospitals), which consists four 4 volumes, by Kemal Özbay. In this book, the transformation of the Sublime Porte from its foundation to 1935 is examined together with the factor of war. The most obstructive part of this book, which contains invaluable information for the researcher, is that it does not include any reference information on the books, articles or archives used. No other works on war and health in the Ottoman Empire, other than some articles, were available. Therefore, the greatest part of the sources used during the preparation of this dissertation is the archive documents. Almost all of them have been used for the first time. In this regard, first of all, the Prime Ministry Ottoman Archives in Istanbul and the Presidency of Military History and Strategic Studies

(ATASE) were reviewed. In the Prime Ministry Ottoman Archive in Istanbul, the Administration Office of the Ministry of the Interior (*Dahiliye Nezareti İdare Kalemi*) (DH.İD), Cabinet Minutes (*Meclis-i Vükelâ Mazbataları*) (MV), the Document Archive of the Sublime Porte (*Bab-ı Âli Evrak Odası Defterleri*) (BEO) (incoming and outgoing documents), the Official Documents Office of the National Security Department of the Ministry of the Interior (*Dahiliye Nezareti Emniyet-i Umumiye Tahrirat Kalemi*) (DH.EUM.THR.) were used. The use of these documents was out of necessity. Since there was no Ministry of Health (*Sihhiye Nezareti*) in the Ottoman Empire, the health services were from time to time executed either by the Ministry of War (*Harbiye Nezareti*) or by the Ministry of the Interior (*Dahililiye Nezareti*). Thus, without disregarding the necessity to review the archives of both of these ministries, research was conducted accordingly. On the other hand, the main difficulty was experienced on the historical period that this study covers, since the classification of the ledgers that pertain to the period of 1912-1918 of the Prime Ministry Ottoman Archive in Istanbul has not been completed yet, the sanitary sections of those of which classification has been completed was attempted to be reviewed with utmost care. During the preparation of the first part, which is on the Balkan Wars, the aforementioned ledgers were mostly used. Furthermore, it should be noted that the minutes of the High Quarantine Assembly (*Meclis-i Umur-ı Sihhiye Mazbataları*), magazines of the Red Crescent Society (*Hilal-i Ahmer Cemiyeti Mecmuaları*), and issues of *İkdam* that pertained to this era within the Prime Ministry Ottoman Archive in Istanbul were used on a large scale.

For the part that focuses on the period of the First World War, however, information on a highly limited scale was found in the Prime Ministry Ottoman Archive in Istanbul, whereas no access could be attained to the documents included in the Document Archive of Sublime Porte (*Bab-ı Âli Evrak Odası Defterleri*) since the ledgers of this era are under restoration. Therefore, this part was prepared mainly from the archives of the Presidency of Military History and Strategic Studies (ATASE). ATASE archives include documents and records that are rich in the area of health. It cannot be said that all of the files were examined, due to the limited time; however, it is worth noting that most of the files deemed significant with regards to the scope of the study were reviewed. Another significant first hand source used was the Year Books (*Salname*) and reports issued by the Red Crescent Society. Especially *Hilal-i Ahmer Salnamesi* (the Red Crescent Yearbook) and *Hilal-i Ahmer Hanımlar Heyet-i Merkeziyesi* (Headquarters of

Women's Auxiliary of the Red Crescent Society) pertaining to the years 1329-1331 (1913-1916) are very important sources that include rich narration and illustrations of the activities of society during these wars. Reports of the headquarters of this society of the years 1330-1334 (1914-1918) provided invaluable information.

Military and civil health magazines of the era, especially *Askeri Tıbbiye Mecmuası* (Journal of Military Medicine), *Ceride-i Tıbbiye-i Askeriye*, *Sıhhiye Mecmuası* and *İstanbul Seriyatı*, were used on a large scale. It should be noted that most of the articles published in these magazines were used for the first time. Furthermore, the "guidelines" within the archives of the Istanbul Atatürk Library, the Library Faculty of Medicine of Cerrahpaşa and National Library made great contributions in explaining some of the precautions taken during the war. Other than these first hand sources, the books published by General Staff under the title of *Türk Silahlı Kuvvetler Tarihi* (History of the Turkish Armed Forces), other Turkish and English books and articles were used in this work.

It is not alleged that this book is a complete work on entirely all dimensions of the issue of health for the time period examined, albeit, it is evident that such a broad topic cannot be fully explained in a single dissertation. However, this work can be accepted as the beginning of an historical account of the epidemic diseases and health services developed accordingly during the two wars that contributed most to the collapse of the Ottoman Empire. Without doubt, it will be possible to evaluate other dimensions of this topic in light of the Ottoman archive documents, which will be available to researchers once their classification is finished, newspapers of the era and foreign archives and books and articles that are published on this issue.