NAZARİYAT

A Comparative Study of Two Plague Treatises in the Ottoman and Holy Roman Lands in the Sixteenth Century

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Abstract: Plague outbreaks, among the greatest catastrophes in human history, have caused profound fear in societies regardless of the period in which they occurred. In efforts to halt the spread of the disease, physicians have employed numerous preventive measures and therapeutic methods. From the years when the Black Death ravaged Europe onward, independent treatises on plague began to be written. In the face of plague epidemics, which recurred intermittently for centuries, physicians of the two great neighboring empires of the sixteenth century—the Ottoman Empire and the Holy Roman Empire—authored treatises either on their own initiative or in accordance with tasks assigned to them. These works, produced in two different geographical contexts, sought to mitigate the impact of the plague, provide means of protection against it, and contribute to the treatment of the afflicted. This study examines plague treatises written in roughly the same period by the Ottoman physician Qaysunizade Nidai (after 1514–after 1567) and the Holy Roman physician Johann Bosch (1514–85), comparing the measures, recommendations, and treatment methods adopted in these two neighboring regions in response to the disease. Qaysunizade and Bosch exhibited similar views regarding the causes of plague, attributing its emergence to miasma, while also citing sin and divine manifestation as spiritual causes. Both physicians regarded certain natural phenomena as signs of impending plague outbreaks. Concerning diet during periods of illness, they similarly recommended sour foods. On the matter of susceptibility to the disease, Qaysunizade offered a theoretical framework, whereas Bosch listed the constitutions more frequently affected without providing a rationale. With regard to quarantine measures during epidemics, Bosch discussed more detailed precautions. On the subject of the *asbāb-i sitte-i ḍarūre* (six essential causes), both physicians expressed similar views. Another notable similarity in the treatises is the recommendation to use precious stones, valuable metals, *kil-i Ermeni* (Armenian clay), and *tin-i mahtum* (sealed clay), as well as compounded preparations obtained by mixing numerous medicinal substances, albeit with differences in composition. In conclusion, a comparison of these two treatises, written in the Ottoman and Holy Roman Empires in the same period, reveals substantial similarities. However, in formulating the theoretical framework of the disease, Qaysunizade provided more detailed information. The varying degrees of elaboration on certain topics in the two works point to differing needs shaped by the religious life, climatic conditions, and medical traditions of the regions in which they were composed.

Keywords: Kaysûnîzâde Nidâî, *Rebîu's-Selâme*, Johann Bosch, plague treatises, plague epidemics.

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Introduction

Plague, a disease caused by the bacterium *Yersinia pestis*,[1] has led to mass deaths as the culprit in major epidemics and, at times, played a significant role in altering the course of history by causing states to lose economic and political power. The plague manifests essentially in three distinct clinical forms. Bubonic plague, the most common type, is characterized by swellings in the lymph nodes (buboes) and is usually transmitted through flea bites. Septicemic plague is a severe condition that develops when the bacteria enter the bloodstream, often as a progression of bubonic plague. Pneumonic plague, the most contagious form, affects the lungs and can spread from person to person via respiratory droplets. It is generally held that during the great plague epidemics of the Middle Ages and later, these three forms often occurred together or in succession. Understanding the types of plague is important for comprehending both the nature of the preventive measures taken by societies and the ways in which the disease spread.[2]

The great plague pandemic known as the "Black Death"—which spread across a wide geography, including European lands, beginning in the fourteenth century—has gone down in history as one of the deadliest epidemics ever recorded.[3] First emerging in 1347 as an intercontinental epidemic, the Black Death[4] reappeared in the Mediterranean region in the early 1360s. From the Ottoman perspective, plague appeared in three phases: the first from 1453 to 1517, the second between 1517 and 1570, and the third beginning in 1570 and lasting until 1600.[5] During these periods,

1 Kathryn A. Glatter and Paul Finkelman, "History of the Plague: An Ancient Pandemic for the Age of COVID-19," *The American Journal of Medicine* 134, no. 2 (2021): 176–81. https://doi.org/10.1016/j.amjmed.2020.08.019.

2 Björn P. Zietz and Harmut Dunkelberg, "The History of the Plague and the Research on the Causative Agent *Yersinia pestis*," *International Journal of Hygiene and Environmental Health* 2017, no. 2 (2004): 165–78. https://doi.org/10.1078/1438-4639-00259.

3 Kay Peter Jankrift, "Schwarzer Tod und Großes Sterben: Seuchen im spätmittelalterlichen Köln," *Geschichte in Köln* 51, no. 1 (2004): 9–22; Hannah Barker, "Laying the Corpses to Rest: Grain, Embargoes, and *Yersinia pestis* in the Black Sea, 1346-48," *Speculum* 96, no. 1 (2021): 97–126. https://doi.org/10.1086/711596; Ole J. Benedictow, *The Black Death, 1346–1353: The Complete History*, Woodbridge: Boydell, 2004; Nükhet Varlık, *Akdeniz Dünyasında ve Osmanlılarda Veba 1347-1600* (İstanbul: Kitap Yayınevi, 2017), 228–34.

4 Neithard Bulst, "Der Schwarze Tod demographische, wirtschafts-und kulturgeschichtliche Aspekte der Pestkatastrophe von 1347-1352. Bilanz der neueren Forschung," *Saeculum: Jahrbuch Universalgeschichte* 30, no. 1 (1979): 45–67.

5 Varlık, Akdeniz Dünyasında, 171–254.

plague caused devastating outbreaks in the Ottoman Empire, while in European societies it had become almost a part of daily life.[6] Plague epidemics persisted until the end of the nineteenth century, when the causative agent was discovered, and into the twentieth century, when successful treatments finally became possible.

In the sixteenth century, the Ottoman Empire, with its expanding borders, increasing urbanization, and intensive trade routes, exhibited a particularly vulnerable structure to infectious diseases such as plague.[7] Meanwhile, the Holy Roman Empire had entered a period marked by sectarian conflicts, anti-Protestant initiatives, military mobilizations, and dense intercity contacts—all of which likewise created favorable conditions for the spread of epidemics. The methods of central authorities in both empires for combating the disease thus provide a rich ground for comparative analysis, both in medical and administrative terms.

In Europe, recurring plague outbreaks became increasingly visible in the Ottoman archival records, especially after 1550. According to information found in the *Mühimme* registers, in the early 1560s a plague epidemic claimed the lives of two thousand people in Salina,[8] a port city on the island of Crete engaged in active trade with the Ottoman Empire.[9] Major plague epidemics also struck Aleppo in 1564,[10] the province of Karaman in 1565,[11] and Thessaloniki in 1568.[12] Again in 1568, plague outbreaks in the villages of Bobosna and Kelice, both belonging to the district of Bana, caused the deaths of a large part of the local population.[13] The plague epidemic that spread between the 1560s and 1570s across a wide geography—from the Mediterranean to Aleppo, and from Anatolia to the Balkans[14]—is referred to in archival sources as *Tâ'un-ı Ekber* ("the Great Plague"), highlighting both its scale and severi-

6 Emrah İstek, "Avrupa'da veba salgını ve salgında din faktörü (Viyana örneği)," *Tarih Araştırmaları Dergisi* 36, no. 62 (2017): 173–204.

7 Halil İnalcık, *The Ottoman Empire: The Classical Age 1300–1600* (London: Phoenix Press, 2000), 71–5.

8 Evliya Çelebi, *Seyahatnâme*, VIII, Haz. Seyit Ali Kahraman vd. (İstanbul: Yapı Kredi Yayınları, 2011), 240.

9 The Presidental OttomanArchive (BAO), A. DVNSMHM.d, 4/2009. (H. 29. 06. 968).

10 BAO, A. DVNSMHM.d, 6/114 (H. 04. 02. 972).

11 BAO, A. DVNSMHM.d, 5/369. (H. 22. 03. 973).

12 BAO, A. DVNSMHM.d, 12/1626 (H. 03. 01. 976); BAO, A. DVNSMHM.d, 12/1828 (H. 07. 02. 976).

13 BAO, A. DVNSMHM.d, 7/2186 (H. 08. 04. 976).

14 Varlık, Akdeniz Dünyasında, 228–34.

ty.[15] The fact that independent plague treatises began to be written in the Ottoman Empire during this period[16] reflects attempts to seek remedies for these devastating epidemics.[17]

The great plague epidemics of the sixteenth century in the Ottoman Empire also appear to have affected the Holy Roman Empire. Plague spread particularly around Augsburg near Ingolstadt in 1547–48, causing far more deaths than in previous outbreaks.[18] This outbreak is thought to have been related to the large gathering at the Imperial Diet convened in Augsburg by Emperor Charles V.[19] Furthermore, the wars with Protestants, which played a role in convening the Diet, also created favorable conditions for the spread of the epidemic. Although the earliest independent plague treatises in the German language date back to the fifteenth century, it is noteworthy that new treatises were written in the Holy Roman Empire during these major outbreaks.[20]

15 BAO, A. DVNSMHM.d, 6/114 (H. 04. 02. 972).

16 Mustakim Arıcı, "İslâm Coğrafyasında Salgınlar Tarihinin Sessiz Kaynakları: Taun/Veba Risaleleri Literatürü," *Nazariyat* 7, no. 1 (2021): 118–19.

17 Emrah İstek, "Osmanlı Hekimlerinin Türkçe Tıp Eserlerinde Veba Hastalığı ve Tedavisi," *Tarih Okulu Dergisi* (*TOD*) 11 (2018): 130–1.

18 As epidemics also occurred in Vienna (the center of the Habsburg dynasty) and its surrounding area, people fled from the horror of the outbreak to the regions of Prague and Bohemia. Consequently, the spread of the epidemic to these cities was inevitable. İstek, "Avrupa'da Veba Salgını," 180.

19 Mariusz Horanin, *Die Pest in Augsburg um 1500. Die soziale Konstruktion einer Krankheit* (PhD dissertation, Georg-August-Universität Göttingen, 2019), 166.

20 In this context, as noted in Horanin's doctoral dissertation, the pharmaceutical compositions prepared against diseases constituted a significant source of income. It appears that even a mere rumor about the outbreak of plague in a certain area could increase public interest in treatises containing advice and remedies related to the disease. Horanin, *Die Pest in Augsburg um 1500*, 70–3. See also Heinrich Auerbach, *Regiment, inhaltendt, wie sich wider die pestilentz zu bewaren* (Leibzig, 1517); Caspar Kegler, *Eyn Nutzlichs vnd trostlichs Regiment wider dy Pestilentz* (Leibzig, 1529); Sebald Nebel, *Ein kurz gemein underricht wie man sich zur Zeit der Pestilenz halten soll* (1530); Andreas Osiander, *Wie und wohin, ein Christ die grausame*[*n*] *plag der pestilentz fliehen sol* (Nürmberg: Petreius, 1543); Dionysius Sibenbuerger, *Ein nützlichs und tröstlichs Regiment wegen der gyfftigen Fieber der Pestilenz* (Nürmberg: Gutknecht, 1544); Jodocus Willich, *Wie man denen helffen sol, welche mit der pestilentische gifft begriffen seind* (Franckfort an der Oder: Eichorn, 1550); Heinrich Steinhöwel, *Büchlein der Ordnung der Pestilenz* (Ulm: Johann Zainer der Ältere, 1473); Ulrich Ellenbog, *Ain wunderbaere jnstruction vnd vnderwysung wider die pestilentz* (München, Memmingen: Albrecht Kunne, 1494); Philipp Kulmacher, *Regimen wider die Pestilenz* (Leipzig: Martin Landsberg, ca. 1495).

Material and Methods

At approximately the same time, in both the Holy Roman and Ottoman Empires, independent plague treatises were being written as part of the struggle against these epidemics and with similar attitudes aimed at raising public awareness.[21] Other characteristics of how both states viewed plague and the methods they employed in combating it can also be learned through these treatises.

Our study compares two such treatises written in roughly the same period: the plague treatise *Rebîu's-Selâme* by the Ottoman physician Qaysûnîzâde Nidâî, and the plague treatise originally written in Latin by the Holy Roman physician Johann Bosch, later translated into German by Samuel Weyssenhorn under the title *Rathschlag, wie man sich zu disen gefährlichen Zeiten, vor der Pestilentz hütten und wie dieselbig so sie eingerissen, wider zu vertreiben, und zu curieren sey*. It evaluates the attitudes of both societies toward plague in light of the information provided by these treatises. In our study, the contents of the relevant treatises were first examined comparatively, followed by a critical evaluation of their contents.

Comparative historical research allows for evaluating a culture's practices not only within itself but also in comparison with those of different cultures. It enables the assessment of such issues as the position of a culture within the scientific level of the period and its contribution to the body of scientific knowledge of the time. Furthermore, due to the differences in the level of explanation given to similar practices in different cultures, it is possible to find additional information in texts belonging to other cultures, allowing more accurate analysis of practices not sufficiently explained or justified in texts belonging to one culture.[22]

However, several difficulties were encountered in applying this method. First of all, since the treatises compared were written in different languages (Ottoman Turkish, Latin, and German), manuscript access and multilingual translation competencies were required to analyze the texts without causing a loss of meaning. In addition, the cultural differences in the religious, political, and scientific understandings of the two societies leads to similar concepts carrying different layers of meaning in each text. For this reason, the analysis was not limited only to the linguistic interpre-

21 Nebel, *Ein kurz gemein underricht*; Osiander, *Wie und wohin*.

22 Elif Gültekin, 19. *Yüzyılda Osmanlılarda Kolera Tedavileri* (PhD dissertation, İstanbul Üniversitesi Sağlık Bilimleri Enstitüsü, 2016).

tation of the texts; rather, each text was evaluated within its own social and intellectual context. Particular attention was given to how terms functioned in their medical, religious, and legal contexts. During the comparative reading, both contemporary primary sources and secondary literature were utilized, and contextual explanations were supported with notes to ensure clarity between the texts.

The primary reason for focusing on the comparison of these two treatises is to understand the medical and social forms in which two empires, belonging to different cultural and political contexts, responded to a similar problem (the plague epidemic). The fact that the treatises were written in the same period by individuals with similar professional expertise makes this comparison meaningful both historically and methodologically. Moreover, both treatises share the purpose of "informing and guiding the public" in the face of epidemic disease, and they represent the written expression of the medical thought and administrative understanding of the time. In this respect, the treatises are not merely medical texts but also instruments reflecting the knowledge-production strategies used by authority to maintain social order. Through comparison, not only differences but also the reasons for and ways in which similarities emerge can be analyzed, thereby providing a deeper historical understanding of the ways in which both societies produced, practiced, and legitimized knowledge.

The selection of the treatises was therefore influenced by their similarities in subject matter, time, necessity, the profession of the author, and other aspects. Both treatises were written during a period of severe plague epidemics. Both were also written in the third quarter of the sixteenth century. Both treatises were composed upon request. Finally, both were authored by individuals engaged in the practice of medicine. The aim of this study is to reveal the similarities and differences in content between these treatises, taking into account both their many common features and their production in different geographies and states.

Introduction to the Treatises

In the Ottoman Empire, the first independent treatises on plague began to be written in the sixteenth century. One of these treatises is *Rebîu's-Selâme*, written in Turkish by Qaysûnîzâde Nidâî Muhammed Çelebi al-Ankaravî.[23] As far as is known, this work

23 Saadettin Özçelik, "Nidâî," *TDV İslam Ansiklopedisi* (İstanbul: TDV Yayınları, 2007), 33:77–8.

is the first independent plague treatise written in Turkish in the Ottoman Empire.[24] Qaysûnîzâde presented this treatise, which consists of a preface, seven main sections, and a conclusion, to Sultan Selim II (1566–74).[25] Since Nidâî was a court physician,[26] it is thought that he wrote his work in Istanbul during the reign of Selim II.

As was customary among Islamic scholars, Qaysûnîzâde began his treatise with a preface (*dibâce*). In this preface, after offering praise to God, blessings upon the Prophet Muhammad (peace be upon him), commendations to the first four caliphs of Islam, and panegyrics to Sultan Selim II, he explained the reason for writing the treatise, as we will elaborate in the following section. He then chose to introduce the treatise with an explanation of the properties of good and bad air. The treatise itself, written in seven chapters (*bâb*), begins with a first chapter titled "What Plague Is and the Causes of its Transmission," though in this section he also explains the effects of the disease on the body. In the second chapter, he discusses the nature of the jinn, which he claims can be among the causes of plague. The third chapter mentions the signs seen before the appearance of plague, followed by information about the disease itself. In the fourth chapter, he explains practices to purify the air; in the fifth, the foods and drinks that should be consumed during plague days, as well as the simple and compound medicines used in treatment; in the sixth, the regulation of rest and activity; and in the seventh, excretory measures. In the conclusion, he addresses the spiritual precautions that should be taken.

The other plague treatise that is the subject of our study is the work written in Latin by the physician Johann Bosch [Ioannem Lonaeum Boscium] (1514–85), professor at the University of Ingolstadt, and translated in 1563 by Samuel Weyssenhorn under the title *Rathschlag, wie man sich zu disen gefährlichen Zeiten, vor der Pestilentz hütten und wie dieselbig so sie eingerissen, wider zu vertreiben, und zu curieren sey* ("Advice on how to protect oneself in these dangerous times from the plague, and how, once it has broken out, it may be driven away and cured").[27] At that time, in

24 Arıcı, "İslâm Coğrafyasında," 119.

25 The manuscript used in our study was copied in 1162 AH (1748 CE). *Kaysûnîzâde Nidâî, Rebîu's-Selâme*, Hacı Selim Ağa Library, No. 882-003, H. 1162 (1748), fol. 106a. This treatise is located between folios 77 and 106 of a work copied in 1162 AH. The manuscript also contains two other treatises, titled *Risāle fi'l-Aḥādīsi'l-Adwiya wa'l-Aṭ'ima* (882-001) and *Risāle fi't-Ṭıbb* (882-002). Another copy of the same work is preserved in the Topkapı Palace Library, catalog number 1744.

26 Özçelik, "Nidâî," 77.

27 Although the title page of the work states that it was written in Latin, no information is provided

Vienna—approximately five hundred kilometers from Ingolstadt, one of the centers of the Holy Roman Empire and the place where the treatise was written—a major wave of plague was also raging.[28] This indicates that the epidemic was affecting many parts of the empire simultaneously.

Bosch organized this treatise written at the request of the Municipality of Ingolstadt under 22 headings. After an introduction and the definition of plague, he focused on its causes, on other epidemics that were "not true plague," and on the signs indicating the imminent outbreak of plague, then listed the symptoms that appeared in the body. He then described the characteristics of those predisposed to plague, the ways of protecting oneself from it, the precautions to prevent its spread through the air, the means of expelling harmful moisture from the body, the foods to be consumed, the proper preparation of meals, and how the body could be strengthened to resist the disease. Finally, he addressed what must be done once the dreadful disease had begun, how to assist those infected, the medicines to be used to eliminate the poisonous matter, the methods of bloodletting, how to treat the bubo (plague swelling), what should be done to induce sweating and afterward, how to preserve the patient's strength, and the precautions to avoid reinfection. He then concluded his treatise with a final section. Although Bosch included a larger number of subheadings in his treatise, he treated the subject in an order largely parallel to that found in Qaysûnîzâde's treatise.

Reasons for Writing

The physician Qaysûnîzâde Nidâî wrote his treatise on plague while an epidemic was raging in the capital. Since the "Tâ'un-ı Ekber" had struck various regions of the country in the 1560s,[29] it is possible to infer that the work was composed around that period. In that year, the plague did not appear during the humid and mild days of spring, but emerged and spread in the oppressive days of the summer (*tâbistân*). Nidâî recounts that, during the days when the plague was prevalent, while walking with his friends by the side of a stream, they spoke about how it would be useful to

about its Latin version. The author also wrote another treatise in the field of medicine in 1582: Johann Lonaeus van den Bosch, *Kurtzer Bericht von dem Podagra und andern Glidtsuchten: Was dieselben für Kranckheite[n] seyn, auch wie man solchen begegnen, und wo sie etwa einreissen wöllen, oder schon eingerissen, sie curiern soll* (Ingolstadt, 1582).

28 İstek, "Avrupa'da veba," 180.

29 BAO, A. DVNSMHM.d, 6/114 (H. 04. 02. 972).

prepare a plague treatise that could be used where needed. Upon his friends' proposal that he take on this task, Nidâî states that he decided to compose the treatise as a service to the *ummah* of Muhammad by bringing together the remedies he had read in works of medicine, philosophy, and religious law and those he himself had tested.[30] Bosch, on the other hand, prepared his treatise at the request of the Municipality of Ingolstadt in order to raise public awareness of plague.[31]

Plague's Causes

Throughout his treatise, Qaysûnîzâde Nidâî evaluated plague within the theoretical framework that it was a disease arising and spreading due to miasma, that is, polluted and putrid air.[32] This miasma theory, whose foundations were laid by Hippocrates, was one of the oldest and most influential theories explaining the causes and transmission of epidemic diseases. Hippocrates associated epidemics with environmental and climatic conditions, asserting that such diseases arose and spread through foul vapors formed in stagnant waters and marshes under the influence of seasonal changes. Galen, the renowned physician of the Roman era, further developed this idea, arguing that diseases carried by foul air could infect only those with particular temperamental dispositions. This view, which held that polluted air played an active role in the spread of diseases, came to be known as the miasma theory.

In the sixteenth century, the miasma theory was the most commonly employed explanation for the transmission of infectious and epidemic diseases. Although Girolamo Fracastoro had by this time developed the contagion theory to explain the spread of newly emerging diseases that could not be accounted for by the miasma theory, contagion remained a limited framework, applied only to a small number of diseases. In both of the treatises we examine in this study, it is evident that, in accordance with the medical tendencies of the time, the cause and transmission of plague were explained through recourse to the miasma theory.[33]

30 *Kaysûnîzâde Nidâî, Rebîu's-Selâme*, Hacı Selim Ağa Library, No. 882/3, H. 1162, fol. 80a. Although the accuracy of the reason for composition mentioned by the physician cannot be verified, it is understood that he assumed a sense of responsibility in seeking a cure for the disease.

31 Johann Bosch, *Rathschlag, wie man sich zu disen gefährlichen Zeiten, vor der Pestilentz hütten und wie dieselbig so sie eingerissen, wider zu vertreiben, und zu curieren sey*, trans. Samuel Weyssenhorn (Ingolstadt, 1563), 1.

32 Nidâî, *Rebîu's –Selâme,* vr. 83b: İmdi ma'lūm oldı ki 'ufūnet-i hevā sebeb-i vebā ve tā'ūndur

33 Gültekin, *19. Yüzyılda Osmanlılarda Kolera Tedavileri* s. 24–32.

Believing that the plague outbreaks in his city arose from miasma (*ufûnet-i havâ*) that formed during the oppressive days of summer and spread throughout the city by affecting people through the air,[34] Qaysûnîzâde begins his treatise by describing the importance and qualities of clean air. According to him, good air should not contain dust, smoke, or harmful vapors. Putrid (*müteaffin*) air, he writes, enters the body through the mouth, nose, and other passages, thus causing disease.[35] The foul air that causes plague, he explains, arises particularly in humid (*râtıb*) and temperate (*mu'tedil*, neither hot nor cold) conditions. Moreover, in such weather not only plague but also sudden death (*merk-i fecâ*) can occur, for putrid air consumes the very essence of the vital spirit (*rûh-i hayvânî*) within the body, annihilating it abruptly. In such cases, physicians are left helpless.[36]

Another point Qaysûnîzâde emphasizes is that while putrid air could give rise to plague, plague itself could also generate foul air.[37] To support this argument, Nidâî cites a ḥadīth concerning plague: the Prophet forbade leaving a plague-stricken area for another place—lest the plague spread to new regions—and likewise prohibited people in healthy regions from entering plague-stricken areas due to the risk of contagion.[38] What Qaysûnîzâde seems to highlight here is that patients release miasmatic air into the environment through respiration, which then infects those who inhaled it.

Qaysûnîzâde Nidâî also notes that factors other than miasma could cause plague. He associates cases in which individuals contracted plague despite the absence of miasma with excessive bodily heat, the overheating of foods and drinks, or excessive physical activity. Therefore, he stresses the importance of avoiding hot weather, heating foods and drinks,[39] and excessive exertion, particularly in the warm seasons.[40]

Qaysûnîzâde further discusses whether there is a contradiction between physicians attributing plague to miasma and a ḥadīth linking plague to the increase of immorality, adultery, and sin, describing it as a disease caused through the agency of

34 Nidâî, *Rebûu's –Selâme,* vr. 80b.
35 Nidâî, *Rebûu's –Selâme,* vr. 81b.
36 Nidâî, *Rebûu's –Selâme,* vr. 83a
37 Nidâî, *Rebûu's –Selâme,* vr. 83b.
38 Nidâî, *Rebûu's –Selâme,* vr. 84b.
39 Nidâî, *Rebûu's –Selâme,* vr. 83b.
40 Nidâî, *Rebûu's –Selâme,* vr. 84a.

jinn. According to Qaysûnîzâde, these two perspectives are in fact compatible, if one has sufficient knowledge of the nature of jinn.[41] He reports that jinn are described as beings created from air, with transparent bodies capable of taking various forms and of speech. According to religious scholars (*ahl-i shar'*), there were three kinds of jinn: some appeared in the form of vermin such as snakes and scorpions; others were devout worshippers whose forms were unknown; and some took the form of wind, with whirlwinds being manifestations of battles among them. These wind-formed jinn (*jinn-i bād*) encompass the air, and plague emerges when the air thus surrounded becomes corrupted. Such polluted air then affects bodies predisposed to plague, leading them to fall ill. Thus, the role of jinn in causing plague is ultimately explained by their ability to generate miasma.[42]

In summary, Qaysûnîzâde argues that plague arises from miasma, specifically the miasma exhaled by the sick or caused by wind-formed jinn, or from the body's internal heat. Bosch, on the other hand, states that plague had once been defined as a fever caused by putrid matter but has more recently been called a suffocating fever.[43] He lists the external causes of plague as comets and corrupted air, both of which disrupt human nature, and as the internal cause, he identifies the increase of corrupted moisture within the body. Furthermore, Bosch points to scriptural passages affirming that plague appears in times of heightened immorality, stressing that it cannot be denied that God sent plague as a punishment for sin.[44]

As can be seen, Qaysûnîzâde explains plague through the miasma theory. He even interprets the Prophet's ḥadīth mentioning jinn as the cause of plague within the framework of miasma, asserting that jinn cause plague by generating foul air. Bosch, like Qaysûnîzâde, considers miasma to be the cause of plague, but his reference to comets as a cause is striking. The fact that Qaysûnîzâde attributes plague to jinn and Bosch to comets demonstrates a similarity in the sense that both regarded supernatural elements[45] as contributing factors.

41 Nidâî, *Rebûʾs –Selâme,* vr. 84b.

42 Nidâî, *Rebûʾs –Selâme,* vr. 85a.

43 *Athmendes fieber*

44 Bosch, *Rathschlag*, 1–2.

45 At that time, comets were believed to pass through the atmosphere and were regarded as negative supernatural phenomena. However, about ten years after the period in which these treatises were written, both the Muslim astronomer Taqi al-Din (1526–85) and Tycho Brahe (1546–1601) observed a comet in 1577. Brahe determined that, contrary to common belief, the comet was not located be-

Bosch's attribution of plague to comets reflects the widespread notion of astrological medicine (*iatroastrologia*) in early modern Europe. Especially from the late Middle Ages onward, celestial bodies were believed to influence weather events, diseases, and human health on earth. Medical astrology was used both to explain the causes of diseases and to determine the timing of treatments (such as the proper days for bloodletting). Comets, in particular, were thought to generate polluted air (miasma) and thus trigger epidemics. Bosch's linking of plague to comets can be seen as an explanatory model of the period, in which the supernatural and the natural were intertwined.

Bosch also, by citing scriptural passages, emphasizes that plague is a divine punishment sent by God in response to human sin. Similarly, Qaysûnîzâde quotes the Prophet's ḥadīth stating that in times of increased immorality, jinn can bring about plague epidemics. Yet, as noted earlier, Qaysûnîzâde differs from Bosch in that he interprets the role of jinn in causing plague through the framework of the miasma theory. On the other hand, both authors mention internal as well as external causes of plague: Qaysûnîzâde attributes cases of plague in the absence of miasma primarily to the rise of bodily heat, while Bosch identifies the internal cause as the increase of corrupted moisture within the body.

The Signs of the Onset of the Plague

Both authors refer to certain natural phenomena as harbingers of plague. According to Qaysûnîzâde, the frequent fall of meteors from the sky in autumn indicates the imminent appearance of plague (*tâ'un*), particularly one caused by jinn. As he reports, it was believed that these meteors were cast by angels to burn jinn and devils. Since meteors were thought to burn only dense (*galîẓ*) or heavy airs, and such heavy airs were considered to be jinn themselves, their fall was taken as a sign of plague. Another indication, according to Qaysûnîzâde, is that some animals sense plague before it arrives and abandon the places they inhabited. For instance, mice, upon detecting foul air, flee their dwellings; if the outside air is also corrupted, the mice appear bewildered and disoriented, not knowing where to go. Storks likewise avoid regions with polluted air.[46]

tween the Earth and the Moon but was sixteen times farther away. By doing so, he refuted the theory that comets—long feared by the public—were atmospheric phenomena. Bk. Ramazan Gürsel Hoşbaş, Atınç Pırtı, "Biri Doğuda Diğeri Batıda, İki Rasathane, İki Rasıt ve Bir Kuyrukluyıldız," *AKÜ FEMÜBİD* 19 (2019): 793.

46 Nidâî, *Rebîu's –Selâme,* vr. 86b.

Bosch, on the other hand, lists as signs of plague the appearance of the comet *Cometas un Pogonis*, the falling of stars, the sight of fire and luminous objects in the sky, earthquakes, dry winters and damp springs, extreme heat, prolonged southern winds without rain, and foggy weather. He also notes that the sudden emergence of certain insects, mass deaths of livestock—especially pigs and sheep—along with the collective migration of birds, are all portents of an impending plague outbreak. Events involving animals in particular are indications that plague is not far away.[47]

As can be seen, both authors interpreted certain natural phenomena as signals of major plague epidemics. Celestial and natural events, climatic anomalies, changes in temperature and humidity, and certain animal behaviors were all taken as signs of plague. Qaysûnîzâde, remaining consistent with the miasma theory on which he built his framework, sought to provide a rational explanation by linking meteors to jinn, and jinn in turn to miasma in the air, thus clarifying why such events signified plague. Bosch, however, without providing a theoretical framework, simply lists the phenomena that were considered omens.

The perception of natural events as signs of plague was not limited to physicians but was part of a widespread belief system shared by broad segments of society in that period. Observable phenomena such as the movements of celestial bodies, animal behavior, and climatic anomalies were regarded not only as omens of plague but also as portents of famine, death, war, or abundance. Based on collective experiences embedded in social memory, certain natural events were evaluated almost like statistical data and interpreted as indications of particular conditions. This outlook was represented in Ottoman literature by *melheme* books.[48]

The Effects of the Plague on the Body

According to both of the treatises we have examined, after the signs of plague appear in nature, foul air is inhaled into the human body, subsequently causing certain disorders within it. Both authors attempt to explain how this process developed. They explain the course of the disease according to the theory of humoral pathology, which was the dominant medical doctrine of the sixteenth century. According to

47 Bosch, *Rathschlag*, 3.

48 Selim F. Adalı, "Fal Kitabı, Melhemeler ve Halk Kültürü by Şeref Boyraz," *Journal of the Ottoman and Turkish Studies Association* 3, no. 1 (2016): 217–20.

this theory, the body is composed of four elements—blood, phlegm, yellow bile, and black bile—and diseases arises when the balance between them is disturbed.

Qaysûnîzâde, following the appearance of natural signs, reports that plague fever (*teb'î veba*) manifests suddenly in people. In cases of plague fever, he observes, general body temperature decreased while the abdominal region grew hotter. Patients suffered from chest pain, tightness of the heart, dryness of the mouth, fainting, and loss of appetite. According to Qaysûnîzâde, such patients must be persistently fed; through the moisture contained in food, the poisonous effect that foul air had produced in the humors would be reduced. However, some inexperienced physicians confused plague fever with other fevers and refrained from feeding patients. In such cases, patients perished because of the plague poison. Other significant signs of plague fever were dry cough, enlargement of the liver and spleen, and the development of dropsy (*istiskâ*), i.e., fluid accumulation in the abdomen. Confusion of consciousness and weakness were also observed in plague patients.[49]

According to Qaysûnîzâde, since foul air affects the humors once taken into the body, the body tries to halt the corrupted humors (*ahlât-ı fâsid*) at certain points in order to protect the main organs. To prevent the spoiled humors from reaching the heart, they are stopped in the armpits; from reaching the brain, behind the ears; and from reaching the liver, in the groin. For this reason, swellings known as plague buboes appear in these areas.[50] Today, it is understood that lymph nodes are located in these regions and that plague buboes form as a result of their swelling.

Qaysûnîzâde also shared his thoughts about the prognosis, i.e., the course of the disease. In his treatise, the patient's tendency to faint and the disappearance of plague pustules[51] are cited as signs that death is near, since pustules indicate the body's ability to resist the condition. The color of the pustules is also interpreted prognostically: black and green pustules signal death, while white or red pustules offer hope of recovery. On the other hand, the appearance of diarrhea immediately after plague fever is considered a very bad sign, whereas constipation is seen as an indication that the poison in the humors would not damage the heart.[52]

49 Nidâî, *Rebûu's –Selâme,* vr. 87a.

50 Nidâî, *Rebûu's –Selâme,* vr. 87a.

51 بشره

52 Nidâî, *Rebûu's –Selâme,* vr. 87b.

Bosch, by contrast, lists the symptoms of plague as the emission of foul odors from the body; malodorous stool; cloudy urine; dizziness; headache; persistent drowsiness; fainting; bad breath; red, white, or black spots on the tongue; irregular pulse; melancholy; and bodily coldness despite high fever. In severe cases, restlessness, anxiety, watery blisters, and suppurative swellings appeared. In suffocative plague, however, high fever was present but buboes and pustules did not develop.[53]

Both authors, with a shared approach, found it appropriate to mention other diseases resembling plague. Nidâî limited himself to noting that plague could be confused with other febrile illnesses,[54] while Bosch briefly discusses other diseases, along with their symptoms, that, like plague, could cause epidemics: *carbunculi*, *ecthymata* or *exanthemata*, *mentagra-sycosis*, Hippocratic paraplegia, *Greek cousin*, and *sudor Anglicus*.[55]

Qaysûnîzâde explains in detail the effects arising after the plague agent entered the body, according to humoral pathology. In this context, he describes why and how the symptoms in patients' bodies—particularly the plague buboes—appear. Bosch, however, without offering any theoretical explanation, merely lists the symptoms that manifest in plague patients. Qaysûnîzâde also differed from Bosch in sharing prognostic information—signs that give clues about life expectancy in plague patients. While Qaysûnîzâde emphasizes that plague might be confused with other fevers, Bosch preferred to enumerate other epidemic diseases different from true plague, thereby distinguishing himself from Qaysûnîzâde in this respect as well.

Predisposition to Disease (*İsti'dâd*)

According to the miasma theory, not everyone exposed to foul air contracted the disease, due to the differing susceptibility of individuals to illness. What determined susceptibility was the balance of a person's temperament (*mizac*). Indeed, Qaysûnîzâde states that foul air only affects those predisposed to it; just as fire affects dry wood more than moist wood, polluted air has a greater impact on certain bodily constitutions. For this reason, when plague broke out in a region, not everyone living there was affected by the disease.[56]

53 Bosch, *Rathschlag*, 4.

54 Nidâî, *Rebûʾs –Selâme,* vr. 87a.

55 Bosch, *Rathschlag*, 2.

56 Nidâî, *Rebûʾs –Selâme,* vr. 83a.

Bosch, however, without offering a theoretical explanation, simply lists those more predisposed to plague. According to Bosch, children are the most affected, followed by youth, then adults, and finally the elderly. In terms of temperamental qualities, those of sanguine (*demevî*) temperament are most susceptible, followed by choleric (*safravi*), then phlegmatic (*balgamî*), and lastly melancholic (*sevdavi*) temperaments. Likewise, weak bodies are more affected than strong ones. Plague was also more frequently observed in individuals with corrupted moisture in their bodies. Plague fever spreads more rapidly among blood relatives and those living in the same household.[57]

In matters of susceptibility to disease, Qaysûnîzâde once again preferred to provide a theoretical explanation, while Bosch, without any theoretical grounding, limited himself to enumerating the groups in which plague occurred more frequently.

Preventive Measures

Isolation

To prevent the spread of plague, Bosch especially emphasizes that plague patients should be kept away from society, stating that long experience had shown that those who were infected or who came from plague-stricken areas carried the disease with them. For this reason, he recommends questioning individuals arriving at the city gates to determine whether they came from plague-affected or contaminated regions, and refusing entry to those who did, as well as to others connected with suspicious areas. However, he stresses that this procedure should be carried out politely, and that individuals deemed risky should be accommodated in lodging places prepared outside the city. He also advises that measures should be taken to prevent the city's residents from traveling to suspicious or diseased areas.[58]

According to Bosch, infected individuals should be isolated from society, and patients should not be allowed to leave their homes for at least one month. No one should be permitted to visit them except in cases of emergency.[59] Corpses of those who have died from plague should be buried away from living quarters and in places free of wind, in order not to endanger others. Burial should be carried out by grave-

57 Bosch, *Rathschlag*, 4–5.

58 Bosch, *Rathschlag*, 6.

59 İstek, "Avrupa'da veba ," 173–204.

diggers who do not mingle among the general population. He further states that during plague times cats and dogs should not be left to wander the streets, as these animals can carry the disease from one household to another.[60]

Qaysûnîzâde, on the other hand, does not provide a special explanation regarding quarantine measures, but in the introduction to his work he refers to the Prophet's advice that people should not go to plague-stricken areas[61], and that those in plague-stricken places should not leave them.[62] Bosch this appears to have given a more detailed account of quarantine measures. As is well known, the first recorded quarantine practice against plague relating to travelers took place in Europe, in Dubrovnik in 1377, and the first quarantine station (*lazaretto*) was established in 1423 on the island of Santa Maria di Nazareth near Venice.[63]

Measures Concerning Air

Since Qaysûnîzâde believed that plague was caused by foul air, he emphasized the importance of staying in places with clean air in order to be protected from the disease. For example, he states that figs, walnuts, eggplants, and yellow reeds contribute to the formation of miasma in the air, and thus he does not consider environments containing these plants appropriate during plague days.[64] He also stresses that the houses inhabited during times of plague should have good air quality. According to Qaysûnîzâde, one should avoid living in closed spaces that receive no air and are surrounded entirely by walls. In ventilated places, winds can bring clean air inside and expel the corrupted air, thereby purifying the atmosphere; in completely enclosed spaces, however, this is impossible, and the air becomes putrid.[65]

While in ordinary times the air of plains was preferable to that of houses, Qaysûnîzâde regarded houses free from foul air as safer during plague days; winds might carry corrupted air from other regions into the plains, thereby polluting the air there as well.[66] However, the air of houses should not contain vapors arising from the sea or

60 Bosch, *Rathschlag*, 22.

61 Buhari, *Sahih: Kitâbü't-Tıb*, Bab 30, Hadis Nr. 5728, (Beyrut 2002), 1451.

62 Nidâî, *Rebûu's –Selâme,* vr. 83b.

63 Panzac, Quarantaines et Lazarets, 31.

64 Nidâî, *Rebûu's –Selâme,* vr. 81b.

65 Nidâî, *Rebûu's –Selâme,* vr. 82a.

66 Nidâî, *Rebûu's –Selâme,* vr. 82a.

from the remains of land and sea animals, which contribute to putrefaction. During plague days, he also recommends remaining in Istanbul rather than in the plains near the city, although he notes that even the air of cities such as Istanbul, Cairo, Aleppo, Bursa, and Edirne is not entirely clean, even if not completely foul. For this reason, he emphasizes that plague is never absent from such cities and that they should be avoided whenever possible.[67]

Because he believed plague arose from foul-smelling air, Qaysûnîzâde also discussed measures to purify the air and eliminate bad odors. He recommends scenting houses with aromatic (*ıtrî*) plants possessing cold and dry properties, such as camphor, sandalwood, lotus, myrtle leaves (*berg-i murd*), and Afghan rose (*gül-i efâgine*). For improving household air, he suggests spraying rosewater and vinegar mixed with water, and sprinkling a mixture of vinegar and Armenian clay (*kil-i Ermeni*) on walls and floors.[68] He further advises placing fruits such as bitter orange, sour orange, lemon, apple, pear, quince, and similar fruits in rooms, cupboards, and shelves, as their fragrant peels can refresh the air of the house. In particular, he emphasizes the effectiveness of bitter orange peel in eliminating miasma.[69]

Qaysûnîzâde also notes that earlier physicians had recommended *lahlaha* during plague days. *Lahlaha* was a mixture of vinegar, sandalwood, Armenian clay, and camphor combined with vinegar. When placed in a bottle and shaken from time to time, it released a pleasant fragrance that Qaysûnîzâde says not only cleanses the foul air in the environment but also reaches the brain through the nose, counteracting the harmful effect of corrupted air there.[70]

Another method he describes is hollowing out an apple, filling it with rosewater and amber, and placing it over a fire burning in the middle of the house. The fragrance thus released was said to be highly effective in removing foul air.[71] Filling the apple instead with only rosewater, or only sandalwood, musk, or a mixture of them, and then inhaling its scent, was also considered beneficial.[72]

67 Nidâî, *Rebîu's –Selâme,* vr. 82b.

68 Nidâî, *Rebîu's –Selâme,* vr. 88a.

69 Nidâî, *Rebîu's –Selâme,* vr. 88b.

70 Nidâî, *Rebîu's –Selâme,* vr. 88b.

71 Nidâî, *Rebîu's –Selâme,* vr. 88b.

72 Nidâî, *Rebîu's –Selâme,* vr. 89a; A Portuguese Jewish physician also offered advice on this topic: Stephan Gerlach, *Ein Tagebuch an die Ottomanische Pforte von Costantinopel, Gedruckt bei Heinrich Friesen* (Frankfurt am Main, 1674), 245–7.

Another practice is pounding aromatic herbs (*ıtrıyyât*), mixing them with rosewater or sour orange-blossom water into a paste, shaping it into a round form like an apple, and smelling it from time to time. This was said to strengthen the brain and dispel foul air. Similarly, pounding and mixing saffron, red sandalwood, white sandalwood, amber, musk, and *oud-i mâverd* into a round shape and smelling it occasionally was also believed to remove the harmful effect of bad air.[73]

According to the experiences of Islamic physicians, preparing incense in a container from musk, amber, *oud*, sugar, black frankincense (*mey'a-ı sâile*), bitter orange peel, and sour orange produced a fragrance that eliminated foul air and, when inhaled through the nose, neutralized its harmful effect on the brain.[74] Other remedies considered particularly effective against corrupted air included mastic (*mastakî*), terebinth resin (*'ilkü'l-butm*), cloves, cypress, prickly juniper (*'ar'ar*), moss (*üşne*), bay leaf (*varaku'l-ğar*), *idhir* (a plant known as *Mekke ayrığı*), and juniper (*ebhel*), all of which were believed to possess cold and dry properties. Although sour orange was hot in nature, it was regarded as unmatched in purifying foul air. Similarly, *Costus arabicus* (*kust-ı şirin*), *senderus*, and *ladanum*, whether used alone or together, were believed to improve air quality. Qaysûnîzâde notes that he has tested many of these remedies himself and witnessed their benefits, affirming that those who used them would be safeguarded from the harms of plague.[75]

Bosch, in turn, lists preventive measures aimed primarily at avoiding the formation of foul air in settlements, since bad odors were thought to cause plague. He advises keeping impure animals such as pigs, geese, ducks, and rabbits away from people; regularly cleaning and sweeping horse stables; cleaning streets more than once a week and especially in the evenings; and situating butcheries and tanneries far from residential areas. He also points out that urine and feces thrown into the streets, the burning of plant waste, and discarded animal hides or human hair emit foul and harmful odors.[76] To prevent the formation of corrupted air, he recommends ensuring that dead animals are not left exposed but are buried, and that human corpsesaere buried as deep as possible by gravediggers who did not mingle with the public.[77] Fur-

73 Nidâî, *Rebîu's –Selâme,* vr. 89a.

74 Nidâî, *Rebîu's –Selâme,* vr. 89a.

75 Nidâî, *Rebîu's –Selâme,* vr. 89b.

76 Bosch, *Rathschlag*, 7–8. See also Osmanlı Devleti'nde Çevre Temizliği Yasaknâmesi için bk. Ahmed Akgündüz, *Osmanlı Kanunnameleri ve Hukuki Tahlilleri VI* (İstanbul: OSAV Yayınları, 1993), 541–4.

77 Bosch, *Rathschlag*, 22.

thermore, he advises masons and builders to construct chimneys tall enough to prevent polluted smoke from spreading into houses.[78]

Bosch also proposes measures for improving household air. He stresses the importance of ventilating houses during plague times and underlines the need to clean all furniture and floors with cloths made of wool or silk.[79] To counteract foul air indoors, he recommends burning incense such as storax (*storax belzoe*), mastic (*mastiche*), and ladanum (*ladano*), or using scented candles available from apothecaries.[80] In winter, burning fragrant woods is advised; juniper wood was said to cleanse the air, though excessive use could cause headaches. On the other hand, Bosch criticizes the superstition that sweet substances, when burned, absorbed poison from the air.[81]

Both authors emphasize the importance of maintaining clean air in cities and houses during plague times, though they place emphasis on different aspects. Bosch's stress on sanitary regulations for urban spaces can be understood as advice directed toward the municipality that had requested his work. His suggestions for scenting household air are relatively limited, whereas Qaysûnîzâde lists a wide range of aromatic plants and fragrant fruits that could be used to perfume and purify the air inside homes.

Measures to Maintain the Balance of Temperament

According to the miasma theory, foul and putrid air affected only those whose temperament (*mizac*) was imbalanced.[82] In humoral pathology, the preservation of temperamental balance depended on diet and drink, the equilibrium of activity and rest, the regularity of sleep, the stability of one's mental state, and the proper regulation of excretory measures—that is, on the observance of the *asbāb al-sitta al-ḍarūriyya* (the six essential causes).[83] In this context, both authors explained what should be done in order to maintain the balance of temperament.

78 Bosch, *Rathschlag*, 7.

79 Bosch, *Rathschlag*, 29.

80 Bosch, *Rathschlag*, 18.

81 Bosch, *Rathschlag*, 17.

82 Marianna Karamanou et al., "From Miasmas to Germs: A Historical Approach to Theories of Infectious Disease Transmission," *Les Infezioni in Medicina* 20, no. 1 (2012): 58–62.
Karamanou et al., "From Miasmas to Germs."

83 Mükerrem Bedizel Aydın, "Osmanlı Tıp Metinlerinde (15-17. Yüzyıl) Hava-Sağlık İlişkisi," *Sosyal ve Kültürel Araştırmalar Dergisi* (*SKAD*) 4, no. 7 (2018): 33–55.

Measures Concerning Food and Drink

Qaysûnîzâde states that plague could also arise from excessive bodily heat, that is, from the increase of the hot quality of the temperament, and for this reason he advises avoiding foods and drinks of a hot nature and refraining from excessive movement so as not to overheat the body.[84] During plague days, he recommendes that foods consumed should especially be of a dry and cold nature, thereby preventing the production of excess blood in the body, since according to humoral pathology blood was one of the elements that increased bodily heat.[85] In line with this theory, foods of dry and cold temperament generally had a sour taste,[86] and thus Qaysûnîzâde advises, during plague days, the consumption of pickles, dishes cooked with sumac, dishes prepared with lemon, apple stew, quince stew, lentil soup with vinegar, bean (*lubiya*) soup with sour orange juice, meals cooked with tamarind and pomegranate (*rummān*) wine, crane (bugra) cooked with vinegar, as well as *rişte* and *tutmaç aşı*. To counteract the harmful effect of pickles, he recommends adding a small amount of onion and garlic, noting that pickles consumed in this way would ward off diseases caused by the incompatibility of air and water. He also states that rhubarb stew (*ribās kalyası*) and verjuice dishes help eliminate miasma, phlegm, yellow bile, and excess blood. According to Qaysûnîzâde, the most beneficial of the sour foods are vinegar and lemon, the latter being regarded by him as a kind of antidote (*tiryâq*).[87]

Qaysûnîzâde notes that, in general, eating without appetite is harmful to health, and then lists the foods to be avoided during plague days. He advises against consuming large amounts of meat, and if meat was to be eaten, it should be accompanied by pickles in order to counteract its harmful effects. According to Qaysûnîzâde, fruits should also be avoided during plague days, as they cause the corruption of the humors. Sweet melon in particular quickly transforms into yellow bile and thus strongly affects the temperament; for this reason, it should not be consumed during plague days or in hot weather. However, drinking *sirkencübin* (a mixture of vinegar and honey) after eating sweet watermelon or melon corrects their harmful effects. For those of phlegmatic temperament, eating candied ginger after consuming watermelon

84 Nidâî, *Rebîu's –Selâme,* vr. 84a.

85 Nidâî, *Rebîu's –Selâme,* vr. 89b-90a.

86 Mükerrem Bedizel Aydın, "Osmanlı Tıbbında 'Müfred Devâ'Kullanımı ve 'Müfredât'Eserlerinin Genel Özellikleri," *Osmanlı Bilimi Araştırmaları* 6, no. 2 (2005): 299–315.

87 Nidâî, *Rebîu's –Selâme,* vr. 90a.

counteracts the damage caused by moisture and coldness. Lemon drink, sour orange drink, and verjuice drink were also considered beneficial after eating fruit in order to prevent its conversion into yellow bile. As can be seen, sour substances were recommended to neutralize the harmful effects of sweet fruits. Sour fruits such as sour pomegranate and sour apple were not regarded as being as harmful as sweet fruits; indeed, because of their sourness, they were considered potentially beneficial.[88]

Qaysûnîzâde recommends, as beverages during plague days, all kinds of sour sherbets, sumac water, barberry (*kadıntuzluğu-amberbaris/zireşk*) water, sweet pear juice, and *sirkencübin* prepared with lemon, quince, pomegranate, and other cooling substances. He states that drinking water very cold will correct the corruption of the humors, and that squeezing lemon into it and drinking it will be even more beneficial, serving both as food and drink at the same time. He also notes that while some sources report that wine could be useful during plague days, according to the people of Islam, wine is prohibited (*harām*).[89]

Among Bosch's dietary measures during plague days, the first point he emphasizes is that one should not remain hungry for long periods, so that the body will not be weakened.[90] Especially in summer months, due to excessive labor and high temperatures, the body's need for support increases. He refers to the views of renowned physicians such as Dioscorides (40–90 CE) and Galen (129–216 CE) when listing foods and drinks considered harmful to health. The meats of pigs, goats, sheep, cattle, deer, rabbits, geese, ducks, and other waterfowl; the livers of animals other than chicken and goose; fish from stagnant and dirty waters; snails other than land snails; and shellfish such as oysters are not to be consumed three weeks before and after the appearance of the constellation Canis Major. During this period, legumes such as chickpeas, beans, peas, and lentils; fruits such as cherries, peaches, plums, mulberries, melons, figs, and lemons; and vegetables such as cucumbers, squashes, and radishes are also

88 Nidâî, *Rebîu's –Selâme,* vr. 90b; Recommendations for the consumption of sour foods are also found in Şerefeddin Sabuncuoğlu's *Terceme-i Akrabadin* and Hacı Paşa's *Müntahab-ı Şifâ*. Sabuncuoğlu Şerefeddîn b. Alî el-Amâsî, *Terceme-i Akrabâdîn*, Süleymaniye Kütüphanesi Fatih Kitaplığı, Nr. 3536, M. 1454, vr. 147a-147b; Celâlüddin Hızır (Hacı Paşa), *Müntahab-ı Şifâ*, Haz. Zafer Önler, (Ankara: Türk Tarih Kurumu, 1990), 177; İstek, "Osmanlı Hekimlerinin Türkçe Tıp Eserlerinde Veba Hastalığı ve Tedavisi," 136, 148.

89 Nidâî, *Rebîu's –Selâme,* vr. 90b.

90 Bosch, *Rathschlag*, 14.

to be avoided.[91] Furthermore, boiled or fried eggs are prohibited, as are all kinds of poor-quality fruit juices, wine, excessive amounts of beer, and stagnant water.[92]

According to Bosch, the foods to be consumed during plague days include veal, kid (young goat), almost all small fowl, chicken, well-fed rooster, partridge, boiled eggs, river fish, land snails, rice, barley, wheat, and bread made from white flour that was neither too fresh nor stale. The recommended drink is wine made from fully ripened grapes, aged for a moderate period, and being neither too sweet nor too bitter.[93] Bosch also advises that, in the preparation of foods, roasting should be preferred over boiling, and that during cooking, pomegranate juice, sorrel juice, verjuice, rose vinegar, capers, olives, vinegar, and salt should be added to the dishes. In this way, he explains, the constipating effect of the meals can be increased.[94]

Regarding the foods and beverages to be consumed during plague days, the points emphasized by the two authors differ. Within the framework of humoral pathology, Qaysûnîzâde recommends foods and drinks of cold and dry nature in order to prevent the emergence of a hot temperament that would render the body susceptible to plague. In this context, he advises a preference for sour-tasting substances. Bosch, on the other hand, believed that it was necessary for individuals to become constipated during plague periods, and therefore emphasizes the consumption of constipating foods and beverages in the daily diet, listing them by name. It is noteworthy that Bosch also recommends that meals be prepared with sour ingredients.

Movement and Rest

Qaysûnîzâde emphasizes that during plague days, neither activity nor rest should be excessive, noting that such extremes disturb the humors. Therefore, in hot weather and during plague times, physical activity should be kept to a minimum, and excessive movement on a full stomach should be avoided. The most suitable time for exercise is after digestion in the stomach has been completed. While rest is more appropriate during the process of digestion, he observes that engaging the respiratory organs through activities such as reading or speaking helps to expel residual matter

91 Bosch, *Rathschlag*, 6–7.

92 Bosch, *Rathschlag*, 11–12.

93 Bosch, *Rathschlag*, 13.

94 Bosch, *Rathschlag*, 13–14.

from the chest. In cases of bloating, a little movement is beneficial, allowing food to settle to the bottom of the stomach.[95]

On the other hand, remaining too inactive during plague days would lead to an increase of moisture in the temperament. Moisture, in turn, would provide a suitable environment for the settlement of miasma. For this reason, Qaysûnîzâde recommends maintaining balance with regard to physical activity.[96] Bosch likewise states that excessive movement leads to harmful moisture, and therefore advises avoiding overexertion—an instruction that corresponds with Qaysûnîzâde's recommendation.[97]

Sleep Regimen

Qaysûnîzâde states that fatigue is in the category of activity, while sleep is in the category of rest, and he advises sleeping whenever fatigue is felt. However, he also adds that both excessive sleep and excessive wakefulness should be avoided. Nevertheless, during plague days he considers sleeplessness to be preferable to excessive sleep. He further notes that daytime sleep is harmful during plague, as it weighs down the brain, spoils the taste in the mouth, pales and cools the complexion, and weakens the body.[98] Bosch likewise states that, since they cause harmful moisture, irregular sleep and insufficient sleep should be avoided during plague days.[99]

Emotion

Qaysûnîzâde describes emotional states as "the movement and repose of the soul." He lists as beneficial to one's state of mind hearing words that bring relief to the soul, and listening to odes and poetry. By contrast, he notes that sorrow and gloom weaken the body's strength and corrupt the humors.[100]

According to Qaysûnîzâde, fear and delusion are also emotional states that increase susceptibility to disease, and one of the most important causes of plague

95 Nidâî, *Rebîu's –Selâme,* vr. 94a-94b.
96 Nidâî, *Rebîu's –Selâme,* vr. 94a-94b.
97 Bosch, *Rathschlag*, 14.
98 Nidâî, *Rebîu's –Selâme,* vr. 95a-95b.
99 Bosch, *Rathschlag*, 14.
100 Nidâî, *Rebîu's –Selâme,* vr. 94b.

transmission is the fear of contracting plague itself. He notes that those who fear plague excessively are more likely to fall ill more quickly.[101] To guard against such an eventuality, Qaysûnîzâde recommends reading and listening to pleasant stories, epics, and poems, as well as listening to and performing music.[102] Bosch, in contrast, did not include any measures concerning the emotional state of patients.

Purification from Harmful Substances

According to humoral pathology, the elimination of harmful substances accumulated in the body was of great importance for maintaining health. Qaysûnîzâde held that the accumulation of such harmful matter in a person's body created susceptibility and ease for the plague to infect him.[103] For this reason, he explains in detail the excretory measures that must be applied during plague days.

Qaysûnîzâde lists the evacuative measures as *fasd* (phlebotomy, i.e., bloodletting from the vein), cupping, baths, sweating, sexual intercourse, vomiting, diarrhea, urination, nosebleeds, and concealed evacuations. According to Qaysûnîzâde, among these methods *fasd* provides general evacuation, and its benefit in eliminating diseases is unparalleled.[104] Through *fasd* (phlebotomy), it is possible to evacuate all the humors. For those who have not made a habit of *fasd*, cupping applied to both calves (*sâk*) is considered sufficient, as this would have the same effect as *fasd*. Those who refrain from *fasd* and cupping are advised to avoid excessive eating, drinking, and sleeping, since in those who sleep on an empty stomach the wastes in the body are naturally eliminated; in this way, the benefit obtained by *fasd* and cupping could still be achieved. After *fasd* and cupping, it is beneficial to induce diarrhea with gentle laxatives such as black plum, apricot, jujube, Persian plum (*sebistān*), fig, dried grapes (*mevīz*), rose, and violet. The addition of senna (*sinamekī*), manna (*shīrhishṭ*), Persian manna (*terenjubīn*), and tamarind further increases the effectiveness of such substances. These remedies could be prepared either by soaking or by boiling.[105] However, intervening in plague patients by inducing nosebleed (*ru'āf*) is not considered appropriate; *fasd* alone is sufficient.[106]

101 Nidâî, *Rebûu's –Selâme,* vr. 95a-95b.
102 Nidâî, *Rebûu's –Selâme,* vr. 95a.
103 Nidâî, *Rebûu's –Selâme,* vr. 95b.
104 Nidâî, *Rebûu's –Selâme,* vr. 95b.
105 Nidâî, *Rebûu's –Selâme,* vr. 96a.
106 Nidâî, *Rebûu's –Selâme,* vr. 96b.

Bosch likewise recommends bloodletting and the use of appropriate medicines to expel the corrupted moisture and the poison of plague accumulated in the body. He particularly advises the application of bloodletting methods to those with an excess of blood, or whose blood vessels are full and obstructed,[107] giving priority among these methods to *fasd* (phlebotomy). Since patients become severely weakened in the later stages of the disease, Bosch recommends that *fasd* be performed at the very beginning and, if unsuccessful on the first attempt, that it be tried a second time. If plague buboes are located in the groin, blood should be drawn from the bone of the leg; if behind the ear, from the forehead and temples; if on the neck, from the tongue; if both behind the ear and on the neck, from the major veins; if under the armpit, from above the liver and the midline of the body. In cases where patients are too young or too old to endure *fasd*, or where there are lesions at the sites for phlebotomy, cupping can be performed instead on the outermost extremities. Bosch notes that physicians generally advised drawing blood from plague patients immediately in order to remove the plague poison from the heart. However, he also reports the view of the physician Maffeus (d. ?), who argued that if the plague poison had not yet spread through the body and contaminated the blood, there was no need to open the veins.[108] Bosch also mentions that cupping can be applied in the cases of those who are fond of eating and drinking. It is evident that Bosch provides more detail than Qaysûnîzâde concerning methods of bloodletting. In particular, his detailed explanation of the specific sites for phlebotomy depending on the location of the plague buboes is noteworthy.

Another of the evacuative methods is diarrhea. Qaysûnîzâde considers spontaneous diarrhea in plague patients to be highly beneficial[109] and lists medicines to use when it becomes necessary to induce diarrhea. These include rose wine (*gül-i mükerrer şarabı*), a compound made of rhubarb (*ravend*) and aloes (*sabr*), and the compound recommended by Ibn Sīnā consisting of aloes, myrrh, and saffron, which was purgative due to the aloes it contained. Also mentioned among the purgatives that can be employed during plague days is senna, praised by the Prophet in the saying, "If there were a remedy for death, it would be senna." In addition, *matbūh* of my-

107 Bosch, *Rathschlag*, 11.

108 Bosch, *Rathschlag*, 25.

109 Nidâî, *Rebîu's –Selâme,* vr. 95b.

robalan (*helilec*) mixed with pure rhubarb, as well as a *necāh* electuary, can be used as laxatives. However, Qaysûnîzâde warns that the use of strong purgatives should be avoided, since they heat the temperament.[110]

In case an evacuation through urination is needed during plague days, Qaysûnîzâde recommends the use of white chicory (*kasnī*) water, the extract of white chicory seed, the extract of *hıyarşenbe* seed, and other mild diuretics. Anise, celery root, and celery seed, however, he does not consider appropriate, since they are hot diuretics.[111] Qaysûnîzâde preferred, both as laxatives and as diuretics, those that did not cause heat, because he was of the opinion that plague arose from an increase of bodily heat.

Like Qaysûnîzâde, Bosch also recommends the use of laxatives in plague. Moreover, he states that, for the expulsion of corrupted moisture and the poison of plague from the body, suitable purgative medicines should be employed before methods of bloodletting. Since plague's poison was not absorbed by the stomach, it could be moved out of the body through medicines. According to Bosch, one of the best laxatives to be used in plague is *trypheraperfica*, recommended by the physician Mesuaes.[112] The renowned physician Iocabi Ricy (d. ?) when plague appeared in Venice, prepared sorrel (*sauramffer*) or borage (*Borragen kraut*) boiled with wine,[113] and also composed a formula he named *recipe euphorbin* ("a euphorbium prescription").[114] Another composition Bosch mentions belonged to the physician Maffeus.[115] Bosch also transmits the recipe of the famous Doctor Springus (d. ?). It was reported by experience that those who used this mixture—prepared from rosewater, distilled sorrel, and scabious (*uyuz otu*), together with daily doses of two lots[116] and one scruple[117] of Armenian bole (*kil-i Ermeni*)—did not die of plague. Springus's recipe was also included in a book written by the famous physician Rufus of Ephesus (70–110 CE).[118]

110 Nidâî, *Rebû's –Selâme,* vr. 96a-96b.
111 Nidâî, *Rebû's –Selâme,* vr. 96b.
112 Likely Ibn Masawayh (d. 1015).
113 Bosch, *Rathschlag*, 8.
114 Bosch, *Rathschlag*, 9.
115 Bosch, *Rathschlag*, 9.
116 1 lot is aproximately 15 grains.
117 1 skrupel is aproximately 1.24 grains.
118 Bosch, *Rathschlag*, 10.

Bosch states that ready-made medicines sold in pharmacies can also be used as laxatives, one of which was known by the names *Ruffi, Pestilantiales,* or *Communes*.[119] Another purgative medicine, sold in pharmacies under the name *rosarum pluriu m infusionum* ("rose infusion"), was composed of *himmeltau/oxyphoenices,* senna leaves (*senetbletter*), *beletici, empeletici,* and *indi* myrobalans. Other purgatives included an electuary called *prunis compositum mitius*; another called *electarium lenitum,* composed of *himeltau/diakssias,* mastic pills, and *ayaric* (*hierae picrae*) pills; the *Rufi* pill; and the *Rufi* drink described by Aeginate (625–90 CE). Evacuatives that could be employed when the poisonous matter was located away from the stomach included rhubarb (*rebarbarum*), the mixture known as *Sebesten electuary, Dannenschwam,* and *Diaphenicum Catholici.* One or several of these evacuatives could be used, under the guidance of a competent physician, for the removal of corrupted moisture from the body. Since the amount of medicine required varied according to each constitution, medical supervision was essential.[120] The fact that the medicines recommended by Bosch for producing a purgative effect in plague patients are not simple substances but generally compound preparations distinguishes his approach from that of Qaysûnîzâde, who recommends simple and fewer remedies.

According to humoral pathology, one of the ways in which harmful substances were expelled from the body was through sweating. Bosch regards sweating as the most relieving stimulus and recommends certain sudorific medicines to be used during plague days. These include theriacs, *gaucheil* water, the root of *gaucheil* boiled in wine or water, and a handful of the root of celandine (*schwalbenkraut*) boiled in rose vinegar. He further notes that adding a small amount of *matterwurz* to beverages, or adding the juice obtained from the leaves and roots of celandine to vinegar, as also effective as a diaphoretic. After the patient perspires with the help of these remedies, it is important to change the bed sheets and to ventilate the room and bed, while taking care not to let the environment become too cold.[121] Qaysûnîzâde, in contrast, does not provide any specific recommendation aimed at inducing sweating in patients.

Other methods by which harmful substances might be expelled from the body were baths (*ḥammām*) and sexual intercourse. Qaysûnîzâde advises that intercourse, which stirs the humors, should only be continued on plague days according to one's

119 Bosch, *Rathschlag*, 9–10.

120 Bosch, *Rathschlag*, 23–24.

121 Bosch, *Rathschlag*, 27–28.

accustomed practice, and, similarly, that baths should not be undertaken unless ritual purification was required, since bathing heats the body and agitates the humors.[122] Bosch, on the other hand, states only that irregular bathing should be avoided during plague days, and makes no mention of intercourse.[123]

Treatment of Plague

Beyond such preventive measures, the simple and compound remedies to be applied to patients who contracted plague are also explained in the plague treatises. Qaysûnîzâde mentions several times, as one of the *mufrad* (simple) remedies used in the treatment of plague, the "*pad-zehir* (antidote) animal." The *pad-zehir*, which he describes as a *tiryāq* (universal antidote) for the human soul, when ground to half a *denk*[124] and administered, is sufficient to cure plague. Other *mufrad* remedies recommended by Qaysûnîzâde are *jadwār-i kishmārī* and *jadwār-i khaṭāyī*, which are to be ground and applied directly to the plague buboes. Qaysûnîzâde also advises the use of precious substances against plague, stating that holding a piece of ruby in the mouth or preparing and consuming it as an electuary would prevent the spread of plague. He adds that eating pearl and coral was also beneficial, while consuming gold and silver leaf strengthen the heart, correct the temperament, and thus provide protection against plague.[125] He further notes that consuming these and similar substances with a small amount of apple wine, sandalwood wine, or quince wine is highly effective against plague.[126]

Other *mufrad* (simple) remedies recommended by Qaysûnîzâde for the treatment of plague are Armenian clay (*kil-i Ermeni*) and sealed clay (*ṭīn-i maḥtūm*). Qaysûnîzâde reports that daily use of these substances was found by experience both to prevent contracting plague and to cure those already afflicted, and that when applied to plague buboes they reduce heat and inflammation. Mixing *ṭīn-i maḥtūm* with vinegar and rosewater and drinking it is also highly beneficial. Indeed, the Prophet, in a ḥadīth, also recommended that those who feared plague should mix *ṭīn-i maḥtūm*

122 Nidâî, *Rebûu's –Selâme,* vr. 96b-97a.

123 Bosch, *Rathschlag*, 14.

124 Cengiz Kallek, "Dânek," *TDV İslâm Ansiklopedisi* (1993), https://islamansiklopedisi.org.tr/danek.

125 Nidâî, *Rebûu's –Selâme,* vr. 91a.

126 Nidâî, *Rebûu's –Selâme,* vr. 91b.

with water and drink it.[127] Qaysûnîzâde additionally suggests certain *murakkab* (compound) remedies against plague.

Bosch likewise emphasizes that strengthening the heart is of great importance against plague, and for this reason he recommends avoiding all foul odors and inhaling pleasant fragrances. He advises the daily use of well-washed Armenian clay (*ṭīn-i Armanī*), sorrel water mixed with wine, or two lots of rose. In addition, according to Bosch, wearing gold rings adorned with precious stones on the fingers or a necklace around the neck is beneficial. Precious stones could also be used by mixing them with medicines. Aromatic rose, the mixture known as *Diarrhodon* containing rose, and the preparation called *Manus Christi* made from sugar boiled with rosewater are among the remedies he lists. Other compositions are *Confectio Liberantis*, as well as electuaries and theriacs, which are cooler and moister mixtures. However, he also recalls that Galen had not recommended theriac for the young and had prohibited its use during the summer.[128]

For the preservation of the patient's bodily strength, Bosch reports that the renowned physician Abū Bakr al-Rāzī (865–925 CE) recommended barley water (*Gerstenwasser*), rice water, and plain water. These could be mixed with lemon juice (*citrinat wasser*), apple juice, rosewater, or violet water; likewise, strong white wine (*malvasier*) could also be combined with rosewater.[129]

Bosch, after presenting all these compositions, also expresses his view that belief in the effectiveness of walnuts, hazelnuts, and figs against plague is a superstition. Although Dioscorides and Galen had both recommended the consumption of these substances—since they had been discovered by Mithridates (120–63 BCE) to be beneficial against poisoning—Bosch maintains that plague poison is different from other poisons and that these remedies are ineffective in treating it.[130]

Bosch also provides information on the treatments to be applied to plague buboes. For buboes that have not yet become pronounced, he recommends cupping over their beginnings, or applying cold substances—such as unslaked lime, blister beetle, pigeon dung, German ginger, *tavukayağı*, buttercup, celandine, lily root (*Lil-*

127 Nidâî, *Rebûʾs –Selâme,* vr. 91b.

128 Bosch, *Rathschlag*, 17.

129 Bosch, *Rathschlag*, 28–29.

130 Bosch, *Rathschlag*, 20.

genwurz), onion, radish (*Rettich*), sublimated mercury, green rust of iron, and soap—to burn them open. Once the bubo has opened, it should be soothed by applying a poultice known as *Diachylon*, prepared from fenugreek seed and flaxseed, or another poultice called *Melilito*. If the bubo is inflamed, it should be cleansed with apple juice, honey, lye (*laug*), or barley flour (*Gerstenmehl*). Afterwards, treatment should continue with *Unguentum Fuscum*, *Unguentum Apostolicum*, *Unguentum Citrinum*, or a poultice known as *Emplastrum Tripharmacum*.[131]

It is noteworthy that both authors recommend the use of precious stones, precious metals, Armenian clay (*kil-i Ermeni*), and sealed clay (*ṭīn-i maḥtūm*) in the treatment of plague. Another common feature of their therapies is their advice to employ compositions obtained by mixing a large number of simples. The details of these compositions are not provided here. In classical medicine, physicians following the path of Hippocrates preferred to treat diseases with as few medicines as possible. However, particularly in cases of poisoning and other seemingly intractable illnesses, Galen's approach was often adopted, wherein compound remedies were prepared through the combination of many ingredients. The fact that both Qaysûnîzâde and Bosch recommend such mixtures for plague indicates that plague was considered at the time to be among the diseases difficult to treat—indeed, even regarded as a form of poisoning. Their recommendation of *theriacs*, themselves composed of numerous ingredients, further reflects this perception. On the other hand, while both authors propose treatments directed at plague buboes, the specific remedies they prescribe differ. One of the most striking points of divergence between the two is that, although Qaysûnîzâde includes nuts such as hazelnuts and pistachios in his compositions, Bosch rejects the view that shelled or unshelled nuts are effective against plague.

Spiritual Measures

Qaysûnîzâde devotes the conclusion of his treatise on plague to the spiritual measures that should be taken. He states that, in general, the Qur'an and the Sunnah prescribe almsgiving (*ṣadaqa*) and prayer (*duʿā'*) for the repulsion of afflictions and calamities, and thus he recommends abundant almsgiving and recourse to prayer during times of plague. He then proceeds to explain at length numerous prayers that can be recited during plague days.[132]

131 Bosch, *Rathschlag*, 26.

132 Nidâî, *Rebûu's –Selâme,* vr. 97a-97b.

Bosch similarly states that during plague days people ought to be both their own physicians and their own priests, emphasizing that the most important way to protect oneself from this disease is to seek refuge in God's mercy. This illness, he explains, is a punishment sent by God.[133] In order to be safe from plague, people must lead a virtuous life; therefore, they should follow the admonitions contained in the Holy Scriptures and, when plague appears, implore God for help, since without God's will success in this struggle cannot be attained.[134]

Both authors thus regard plague as a form of calamity and emphasize that, alongside all medical measures, seeking help from God is also indispensable.

Conclusion

In this study, a comparison has been made between a treatise written by Qaysûnîzâde as a service to society, in which he brought together the compositions he had tested himself from the medical, philosophical, and religious books he had read, and a treatise prepared by Bosch at the request of the Municipality of Ingolstadt in order to raise public awareness about plague.

Both Qaysûnîzâde and Bosch display similar approaches to the causes of plague, attributing its emergence to miasma, and also mentioning sin and divine manifestation as spiritual causes. The physicians regard plague as a kind of calamity and point out that, alongside all medical measures, seeking help from the Creator is indispensable. Both also consider certain natural phenomena as signs of plague epidemics. However, while Qaysûnîzâde preferred to provide a rational explanation for spiritual causes within the context of the miasma theory, Bosch did not present a theoretical framework for the supernatural events he enumerated.

With regard to diet during times of illness, both recommend sour foods. On the matter of susceptibility to disease, Qaysûnîzâde offers a theoretical approach, whereas Bosch, without providing a rationale, simply lists the constitutions in which plague was more frequently observed. Concerning isolation during epidemics, Qaysûnîzâde evaluates the issue within the framework of a ḥadīth advising "not to enter a place where plague exists and not to leave the place where plague has broken out," while

133 Bosch, *Rathschlag*, 5.

134 Bosch, *Rathschlag*, 2.

Bosch describes more detailed measures. Regarding the purification of air, both refer to urban sanitation as well as the cleansing of domestic air with incenses and fragrant herbs. On the maintenance of temperamental balance—through limited and regulated movement, regular sleep, and avoidance of excessive emotional states or activities that generate bodily heat—the physicians held similar views. Another notable similarity in the treatises is the recommendation of precious stones, precious metals, Armenian clay (*kil-i Ermeni*), and sealed clay (*ṭīn-i maḥtūm*) as plague treatments, along with compound remedies prepared from the mixture of numerous simples, although the specific contents differ between the treatises: while Qaysûnîzâde includes nuts such as hazelnuts and pistachios in his compositions, Bosch rejects the view that shelled and unshelled nuts were effective against plague.

In conclusion, when the two treatises written in the same period in the Ottoman and Holy Roman Empires are compared, it becomes clear that they share many similarities. However, in setting forth the theoretical framework of the disease, Qaysûnîzâde provides more detailed information. The fact that the two treatises address their topics with varying degrees of detail points to differing needs arising from the religious life, climatic conditions, and medical traditions of the regions in which they were written. For example, since Bosch's treatise was a text prepared with the support of local government, it also includes subjects such as urban sanitation and quarantine protocols.

This article offers several contributions to the history of plague, the history of medicine, and comparative historiography. First, by directly comparing medical treatises of a similar type written within two different cultural contexts, it brings to light structural similarities and substantive differences in the modes of knowledge production of the period. In future research, conducting similar comparisons across other empires (for example, the Safavids, Spain, or Venice) and among treatises written in different languages will make it possible to analyze more comprehensively the intellectual and practical responses that different societies developed against plague. Moreover, studies on the circulation, readership, and impact of these treatises will provide valuable insights into the ways in which medical knowledge spread during the early modern period. The systematic digitization of medical texts in languages such as Latin, Arabic, and Ottoman Turkish, along with the creation of databases enabling intertextual comparison, will also be of great importance for the further development of this field.

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