

Defending the Guarded Domain: Epidemics and the Emergence of an International Sanitary Policy in Iran

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Inquiry regarding the advent of modernity within the framework of Islamic communities of the Middle East, and most notably vis-a-vis their encounter with the West, has been a significant source of academic reflection.¹ Iranian historiography has not been immune to this movement, and accordingly the past several decades have spawned a number of works examining the milestones and the emerging institutions that have ultimately shaped the socio-political landscape of contemporary Iran.² Notwithstanding this scrutiny, the role of illness and the evolution of a modern public health policy have scarcely evoked a footnote in the expanding theme of Iranian modernity. This dearth is particularly remarkable in view of the fact that the process, which ultimately led to the institutionalization of public health infrastructures in 19th-century Iran, was intimately linked to Iran's newfound diplomatic engagements with European governments. The ensuing "Westernization" of Iranian institutions, which grew out of this increased intercourse, has often been used as the yardstick for measuring modernity in Iranian society. However, this very process of appraising modernity by means of utilizing the European paradigm becomes inadequate, as we shall see, in regards to the development of sanitary measures in Iran. In fact, from its inception in the early 19th century, the growth of an organized sanitary body in Iran progressed in tandem with the country's flourishing internal stability, strengthening political leadership, and an increased sense of nationhood and patriotic convictions. Indeed, growing nationalism in Qajar Iran was translated into a mounting sense of responsibility on the part of the Government with regard to its citizenry. Moreover, an emerging sense of national "shame" [*aberou*]³ in the face of staggering epidemics, together with a growing need to counter Western imperial interventions resulted in stronger stimuli for the promotion of an organized policy of public health. Hence, Iran's social, military, economic and mercantile interests became stronger advocates of sanitary reform, rather than (or sometimes even in opposition to) the prevailing European scientific opinions and hygienic models.

Using the framework of developing institutions of public health in Iran, the assessment of modernity can be seen to transcend the Western archetype. Indeed, the Iranian

phenomenon reveals that the effects of globalization and an increased political participation on the international stage by the Qajar leadership becomes as much a manifestation of modernity as the actual espousal of technologies and know-how. It is this very change in the national psyche that becomes the true gauge of modernity during the Qajar era; a movement in which Iranians no longer view themselves merely in the singular: as people of the "protected domains," but increasingly as a nation with its rightful position and responsibilities in a global context.

The Early Gestation of Preventive Medicines: Abbas Mirza, John Cornick and Smallpox Inoculation

The reign of Fath 'Ali Shah (1797-1834) marked a rare period of stability in over half a century of tumult in Iranian history. It is therefore not surprising that the first conscious attempts at contagious disease prevention by the Iranian government took place in this era.⁴ However, a contemporary European vision of "sanitary police" was a far cry from the initial attempts at health policy in 19th-century Iran. In fact, these first efforts, undertaken by visiting Europeans to the court of Fath 'Ali Shah, were actually strongly resisted by Iran's ruling elite. For instance, when Dr. Andrew Jukes⁵ began vaccinating children in Tehran against smallpox in 1813, in the hopes of stemming the ravages of an epidemic, he met with little success. This was principally because the Qajar administration, suspicious of alien intervention, immediately sent agents to the British consulate under the pretext of offering their assistance, although their true purpose was to prevent any woman, who brought her child for inoculation, from gaining access to the embassy.⁶

Nothing can exceed the preserving humanity with which Mr. Jukes endeavored to introduce vaccination into Persia. His efforts were unremitted for several years: they were defeated more by the apathy of the government than by the prejudices of the people.⁷

However, government resistance to smallpox inoculation was short-lived; soon Iranians came to accept the procedure they recognized as being akin to the familiar and much-performed practice of variolation, prevalent in Iran at this time.⁸ Moreover, with the apparent success of European medical intervention among the ruling Qajar elite, Western ideas of public health began their slow trickle into the Ira-

nian psyche. Fath 'Ali Shah's Crown Prince and Governor of Tabriz, 'Abbas Mirza, is a quintessential example of this trend towards the espousal of European preventive health practices. Having been cured of a venereal complaint, the Prince embraced the recommendations of his English physician, Dr. James Campbell,⁹ and agreed to have his family vaccinated against smallpox. Furthermore, he requested the permanent appointment of a British physician to his service and undertook the sponsorship of Mirza Baba Afshar's medical studies in London and Oxford in 1818.¹⁰ It was 'Abbas Mirza's recognition of the significant life-saving value of the smallpox vaccination, together with his quest to preserve the health of his *Nizam i Jadid* (new army) that led to the first steps in spreading the knowledge of the Jennerian method of vaccination among Iranian physicians. Accordingly, Dr. John Cormick, who had succeeded Dr. Jukes as 'Abbas Mirza's personal physician, composed a treatise on vaccination at the Crown Prince's request so as to promote this practice. The tract, entitled: *Risalah i abilah-kubi*, was translated by Mohammad 'Ibn-i 'Abd al-Sabur, and when published in 1829 was among the first works to be printed in the newly established printing press in Tabriz.¹¹

A ruptured abscess in the liver brought an end to 'Abbas Mirza's life (d. 1833) and shortly thereafter, his father, Fath 'Ali Shah passed away as well. These developments ushered in a period of conflict and renewed administrative disorganization throughout Iran, as well as an abrupt halt to the momentum, which had been building towards a public health policy. Nevertheless, Mohammad Mirza (1834-1848), who succeeded Fath 'Ali Shah, took a few steps in disseminating knowledge on contagious diseases and their mode of transmission. However, it is possible that these steps were undertaken as a result of Mohammad Shah's own acute hypochondria and fear of disease, not necessarily for the benefit of the masses.¹² Consequently, during his reign Mohammad Shah bid a student and fellow kinsman, Mohammad Hussein Qajar, to travel to Istanbul for language instruction in French at the newly founded Ottoman language academy. On his return, Mohammad Hussein¹³ was then ordered to help a Monsieur Jibril compose a Persian treatise on cholera, entitled *Risalah dar vaba*. This work, which purported to be based on "efficacious" treatises composed in India and other endemic areas for cholera, described the etiology of the disease and ways to "battle" the scourge.¹⁴ Moreover, on a regional level, enlightened governors engaged in sanitary measures independently from the central government. In 1846 for example, following the visitation of Asiatic cholera in Tabriz, the city's Prince-Governor, Bahman Mirza, ordered an end to the practice of "temporary vaulting" of dead bodies, which represented a threat of renewed cholera breakouts based on contemporary notions of miasmatic theories of pestilence.¹⁵ Indeed, the tradition of temporary burials, followed by subsequent transport to holy ground, was a ubiquitous catalyst for the recurrent outbreaks of cholera in Iran throughout the 19th century.

The ascension of Nasir al-Din Shah to the throne in 1848 and the subsequent tenure of his first Premier, Mirza

Taqi Khan Amir Kabir (1848-1851) marked a short-lived reawakening in Iranian public health consciousness. In fact, Amir Kabir's administration as *Sadr i 'Azam* can be seen as a short break in the "grand duree" which characterized medical and sanitary undertakings in the period between Abbas Mirza's regency in Tabriz and the coming to power of Mirza Husayn Khan Mushir al-Dawlah. One of the widely acknowledged legacies of Amir Kabir's Premiership was the establishment of his brainchild — the Dar al-Fonun (École Polytechnique). This academy was in many ways heir to 'Abbas Mirza's quest for a new military order; since as the Prince before him, Mirza Taqi Khan's vision of a *nazm* (order) and sovereignty of the Iranian nation rested in the creation of a "new army" modeled along European lines. Whereas, the Prince had sought to lay the pillars of this new order by sending students abroad for training, Mirza Taqi Khan favored building this new order from within by establishing an academy, staffed by European instructors, to train the officers and technicians to supply this new army. Faithful to his martial outlook, Mirza Taqi Khan, like Abbas Mirza before him, knew that a key feature of the "modern" Western army was the military surgeon and physician. However, whereas Iranian *Hakims* of the mid-19th century could, in hindsight, have claimed to rival their European counterparts in therapeutics, a superior anatomical knowledge on the part of Western surgeons made them better caregivers on battlefields. Consequently, clinical instruction became a cornerstone of the Dar al-Fonun and like the academies of Europe, Amir Kabir also founded a "Government Hospital" in January 1850 for the purpose of instructing medical students.¹⁶

The medical college at the Dar al-Fonun truly came to fruition only after Mirza Taqi Khan's demise, and its legacy in public health came to embody a far larger scope than its founder had envisioned. Indeed, more than merely creating native physicians along European lines, the Dar al-Fonun became a center for the propagation of European intellectual trends. Indeed, the new academy came to shape distinctly Iranian conceptions in the new sanitary science, through the numerous medical works authored or translated by its faculty and printed lithographic press. Indeed, the very vocabulary of modern Iranian medicine emerged from the Dar al-Fonun, when the Dutch physician and medical professor, Johanne L. Schlimmer, published his *Terminologie medico-pharmaceutique et anthropologique Français-Persane* in 1875.¹⁷ More than a simple dictionary, Schlimmer used this medium as a way of instructing his students in the art of medicine and public health by including his lectures and even, at times, the results of his investigations during his various commissions. Under the rubric of bubonic plague, for example, Dr. Schlimmer devotes a number of pages to the results of his investigations concerning the outbreaks of the disease in Iranian Kurdistan in 1871. Moreover, Schlimmer is probably the first medical scholar to enunciate the definition of public health in the Persian scientific language. Hence, under "*Préservation*," he cites "*Héfze Sihhte: Jelow-e Maraz Gereftan*" (preservation/public health: to prevent disease).

It should be recognized that Schlimmer's publication

was one among many works propagating novel notions of sanitary science among Iranians to come out of the Dar al-Fonun press. Indeed, long before Schlimmer had codified the Persian medical language, Dr. Jakob Eduard Polak,¹⁸ a subject of the Austro-Hungarian Empire and professor of medicine at the Dar al-Fonun, published a treatise on Asiatic cholera which included the latest European knowledge on the etiology of the disease, together with symptoms, postmortem pathology, and most importantly sanitary steps to prevent its propagation.¹⁹ Moreover, Polak's efforts in the field of military medical education at the Dar al-Fonun led to the creation of a cadre of army surgeons, modeled along Western military standards, which revolutionized the effectiveness of the *Hakim i Foj*. Indeed, Polak later observed that before the appointment of his students to the Iranian Army, the sight of wounded soldiers arriving from the battlefields was exceptional, due to the fact that the majority of the injured succumbed to their wounds due to a lack of adequate medical care.²⁰ This was especially true during times of epidemics, when mortality was rampant among the rank and file of the Iranian army. During the 1852 cholera epidemic, for example, Polak observed many regiments, which were ordered to quit Tehran on account of the outbreak, abandoning their sick soldiers to die unattended on the roadside, leaving a trail of dead and suffering men in the wake of their retreat. It is only after the appointment of Polak's students as physicians to the various regiments that we begin to see the sanitary improvement of the Iranian army in the second half of the 19th century.²¹ This accomplishment, more than anything else in the medical field, embodied 'Abbas Mirza's and Amir Kabir's visions of a new order molded upon European norms.

Amir Kabir undertook certain tangible preventive public health measures. In 1850, for example, the Sadr i 'Azam was told that a number of Tehran's citizenry had succumbed to an epidemic of smallpox. Consternated by this news, Amir Kabir immediately ordered all of the inhabitants of the capital and its surrounding areas to be inoculated against the disease so as to stem the propagation of the outbreak.²² However, Amir Kabir, like his predecessor before him, encountered difficulties in his campaign. Indeed, several days after the commencement of the vaccinations, he was told that a number of people, for a variety of reasons (including fear and ignorance), were unwilling to submit themselves to be vaccinated. Hence, due to the continued casualties to the disease, as a means of compulsion, the Amir decreed that a fine of five *toman* (which were to be added to Government coffers) was to be levied on all who refused to undergo the process. Notwithstanding the fine, many still persisted in evading vaccination due to superstitions and prejudices and either paid the fine, when they could afford it, or hid from the Government's agents who were responsible for vaccinating the population. Thus, altogether a mere 130 people in Tehran were vaccinated. A witness relates a very revealing story about Amir Kabir's disposition towards public health. It was said that Amir Kabir was so frustrated by this turn of events that he wept at the sight of infants who had succumbed to smallpox. While the Amir was weeping, Mirza Agha Khan entered the room, and seeing the Amir's distress, inquired as to the cause of

his tears. One of the attendants told him that the Amir had just witnessed children who had succumbed to smallpox because of their parent's fear of vaccination. This highly surprised Mirza Agha Khan, who had thought that the Amir was weeping because of the death of his own child. The Mirza then approached the Amir and stated that a grandee such as he should not weep for the lowly children of bakers and cobblers. This statement enraged the Amir, who stood up, wiped his tears and stated that "as long as We have shouldered the management of this nation, We are also responsible for its peoples' death." Mirza Agha Khan, then fearfully stated that these people were dying because of their own ignorance. The Amir then responded that "We are also responsible for their ignorance."²³

Despite his most earnest efforts, the short duration of Amir Kabir's rule, together with the Premier's other priorities, prevented him from engaging in any significant and fruitful measures of disease prevention beyond his limited undertakings in Tehran. However, with the emergence of the Dar al-Fonun as an institution, the intellectual groundwork was set for the emergence of a public health policy in Iran. Nevertheless, that was far in the future as the demise of Amir Kabir not only brought his reforms to an end, but it also ushered in a renewed period of reactionary decentralization and national unrest.

The Internationalization of Disease Prevention in Iran: The Constantinople Sanitary Conference of 1866

In the year 1865 Asiatic cholera made dramatic progress from the Hijaz to Egypt and from there to Europe. Cholera's presence in Europe, in itself, was not a novel occurrence. In 1846, Asiatic cholera traversed the very same path, infecting the whole of that continent. What made this specific outbreak notable was the sheer speed of the epidemic's progress from the Hijaz, across the Mediterranean and into Western Europe. In retrospect, this should not have come as a surprise. On account of the rapid industrialization, which Western Europe had undergone in the two decades previous to the outbreak, the second half of the 19th century marked a period of unparalleled growth in international trade and transport. The ubiquity of railroads and maritime links to the Middle East, and within Europe itself, was largely responsible for the rapid propagation of the epidemic.

One of this period's most important innovations which had reduced the travel time in the heartland of the Middle East was the completion of the Alexandria-Cairo-Suez railway line. This line, which connected steamship transport in the Mediterranean and the Red Sea, was put into effect in 1858 and was used with great frequency, by maritime pilgrims to and from Mecca, who preferred the rail-sea road to the long and arduous caravan treks across the Hijaz.²⁴ As it happened, there was a cholera outbreak in India in 1865, as well as an auspicious year for pilgrimage (the *Hajj al-Jum'a*) that attracted a significantly greater number of believers than usual to Mecca.²⁵ Consequently, the setting was ripe for Asiatic cholera's rapid westward progress.

As a result of cholera's export into Europe and the socio-economic devastation it wrought, concerned nations, led by French initiative, decided to convene an international

sanitary conference in 1866. The principal aim of the conference was for affected states to engage in a common policy to combat a recurrence of Asiatic cholera in Europe. When the meeting was opened in Constantinople on February 13, the countries represented included Austria-Hungary, Belgium, Denmark, Spain, the Papal States, France, Great Britain, Greece, Italy, Netherlands, Portugal, Prussia, Russia, Sweden/Norway (then politically united), Iran, Egypt, and Ottoman Turkey. Iran's representatives at the conference were Mirza Malkam Khan, the famed reformer who at the time was a consular *aide de camp* at the Iranian Legation in Constantinople, and Dr. M. Sawas Effendi,²⁶ an Ottoman subject and sanitary inspector at Constantinople.²⁷ Moreover, Dr. Jakob Eduard Polak, who previously held the positions of medical professor at the Dar al-Fonun and personal physician to Nasir al-Din Shah (in addition to authoring a Persian work on cholera entitled *Bimari i vaba*) also attended the conference as part of the suite representing the Austro-Hungarian Empire. The significant presence of expertise on Iran indicated the importance which international policymakers and sanitarians accorded to Iran's role in the transmission of Asiatic cholera westward and foreshadowed the strong measures of public health reform which would be recommended to the Iranian Government.

Ostensibly, much of the discussions at the meetings concerned the exact etiological and nosological nature of Asiatic cholera in order to establish a common ground in defining the nature of the disease, at a time when sanitary interventions were impeded by varying views on the character of the malady. The centerpiece of the conference, however, was the deliberation of its third commission dealing with defensive "measures to be taken in the Orient so as to halt recurrent invasions of cholera visitation into Europe."²⁸ The delegates all agreed that epidemics of Asiatic cholera were endemic to the Ganges delta and experience with previous visitations indicated that the disease was always imported into Europe, either via maritime routes or overland. Therefore, they felt that the flow could be stopped at one of the "intermediary" countries if adequate restrictive measures were taken. More than anything else, the issue of quarantine restrictions brought to the surface some of the most passionate convictions in the conference, beliefs that reflected the partisan divides on the very nature of cholera and its transmission. On the one hand, the anti-contagionists, led by England, espoused Max Joseph von Pettenkofer's (1818-1901) theories on cholera propagation,²⁹ believing that restrictive sanitary undertakings did not prevent the spread of cholera and only hurt mercantile activity and impinged upon individual civil liberties. On the other hand Mediterranean maritime nations spearheaded by Italy,³⁰ with their long history of quarantine restrictions to combat bubonic plague and, in the Italian case, with its tradition of experimental empiricism, believed that there was adequate evidence to indicate the contagious nature of cholera and the efficacy of quarantine detainment as a means of stemming the flow.³¹ Notwithstanding ideological differences, the members of the commission reached a unanimous agreement that restrictive measures, applied in a timely and efficient manner, were much less prejudicial for commerce and international relations than the disruptions

brought on following a visitation of cholera. Moreover, delegates at the conference also agreed that early application of quarantine and prophylactic measures at the endemic sources of the disease, would ensure a more effective outcome, provided the measures were applied adequately, in preserving Europe from the flow.³²

The 1865 epidemic in Europe had been closely linked with the *Hajj*; however, more than being a mere vector, the pilgrims to Mecca from the Indian subcontinent were singled out as the single-most important culprits in the propagation of cholera to Europe. Consequently, the conference recommended some of the most restrictive and intrusive measures to guard against a recurrence of the previous year's epidemic, including the use of gun ships to enforce sanitary regulations in the Red Sea and forced mass quarantines lasting 15 days. In the case of an outbreak among pilgrims, the recommended quarantine would extend 15 days *after* the cessation of cholera among the pilgrims (this meant that people could be incarcerated for over a month).³³

In the case of Iran, due to its geographical centrality and shared common border with India, Afghanistan, Russia, and the Ottoman Empire, delegates agreed that the country was a significant thoroughfare for the propagation of cholera into Europe. Experience from previous visitations had shown that the city of Herat, in Afghanistan, was the main venue for the importation of cholera into Iran. Traditionally, Herat would acquire the disease from India via Kandahar or Kabul, which it would then transmit to Mashhad in northeastern Iran. Consequently, the importance of surveillance of this highway as a means of preventing the initial importation of the disease into the country, was emphasized to the Iranian Government.³⁴

As in India, pilgrims in Iran were singled out as the prime disseminators of the disease in the country and also as the export vectors for the scourge. The pilgrims to Mashhad were seen as the initial propagators of the disease within the country itself, and Iranian Shi'i pilgrims to Karbala and Nejed were elected as the exporters *par excellence* of the disease into Ottoman Iraq via the border town of Khanekin or to a lesser extent through the Gulf ports Mohammerah and Bassorah.³⁵ The Shi'i practice of transporting cadavers to be buried in holy ground was also enumerated as a principal cause for the generation and frequency of outbreaks throughout Iran and across its shared border with the Ottoman Empire.³⁶

Somewhat fatalistically, the conference concluded that since the Iranian Government was incapable of defending itself from either the terrestrial or maritime importation of cholera from India, its primary goal had to be that of limiting the extension and degree of damage inflicted by the scourge once it was imported.³⁷ To this end, the delegates recommended that a sanitary polity, modeled after the Ottoman system, would be needed in Iran. This body would be comprised of a central administration supported by a sanitary council, which in turn would direct sanitary officers stationed at strategic points throughout the country. It should be noted that this recommendation stipulated that at least half of the members on the sanitary council in Iran would have to be European.³⁸ In regards to pilgrimage, the

conference recommended that the Iranian Government should suspend them during epidemics. Based on Dr. Polak's testimony, a precedent existed (the Shah had set a similar ban in the past), which would make this undertaking feasible.³⁹ In addition, in view of the futility of banning the entrenched practice of reburial in sacred ground, the Iranian Government was advised to require the cadavers to be embalmed, hermetically sealed, and only allowed to be exhumed during the three winter months.⁴⁰ Nevertheless, before such undertakings could be enforced, delegates reiterated that Iran needed a sanitary organization capable of applying hygienic measures and policing vital highways and pilgrimage routes. Following concluding remarks, these recommendations were put to the vote, which resulted in unanimous approval with the exception of the Iranian representatives, Mirza Malkam Khan and Dr. M. Sawas Effendi, who, although voting in favor, voiced their reservations about the proposals.⁴¹ These doubts stemmed from the recognition, on the part of the Iranian delegates, of the extreme difficulty of applying the restrictive measures recommended. Indeed, during the 1850s and 1860s, Iran had to grapple with outbreaks of cholera almost on a yearly basis; consequently to restrict pilgrimage and exhumations during epidemics would mean that the Government had to virtually bring the religious life of the country to a standstill — something that both Mirza Malkam Khan and Dr. M. Sawas Effendi saw as an impossibility. This view was verbalized by Malkam Khan, during the plenary session on the French proposal of a maritime ban between the Arabian ports and the Egyptian littoral in the event of an outbreak among Meccan pilgrims. As Malkam Khan explains, the acceptance of the recommendation

would raise storms of hatred in the Moslem world and create the most serious difficulties for oriental governments. The ideas, customs, doctrines and logic of Asia were so different from those of Europe that the mere idea that Moslem Sovereigns had come to an understanding with European powers to regulate the progression of the pilgrims would be sufficient to change completely the relations of those Sovereigns with their subjects and would expose them to the attacks of fanaticism all the more violent because in recent times everything had been done to restrain it. The European Powers could obtain everything from the peoples of Asia on condition that they knew how to save appearances and to give to their demands a form that would make them acceptable, and it was for that reason that the ports of Yambo and Omar should be left open.⁴²

Moreover, with the stipulation that at least half the representatives on the sanitary council had to be European (which in the case of Iran meant physicians to European Legations) the Iranian delegates recognized that their country could lose all sovereignty over its own sanitary affairs and would place significant coercive powers in the hands of European nations over internal and commercial affairs of the country. Consequently, with the exception of proposals for the creation of a sanitary council, it is not surprising that the Iranian Government was not very receptive to the proposals of the Constantinople Conference.

On the scientific front, the position of the Iranian delegates vis-a-vis the etiology of cholera was as much a reflection of their national interests as their support for restrictive

measures to stop the flow of the epidemic into Europe. For example, although a clear majority of the conference participants supported the view that the incubation period of cholera was no longer than a few days, both Mirza Malkam Khan and Dr. M. Sawas Effendi abstained from supporting this consensus.⁴³ This position was probably motivated by the knowledge, on the part of the Iranian delegates, that the support of this view would also mean a tacit recognition that the temporary quarantine of suspicious cases would ensure against the flow of outbreaks. Mirza Malkam Khan also abstained from supporting the view that cloths and linen could be fomites for cholera, for he knew that if such a position was espoused internationally, the cotton export of Iran, which was an important cash-crop, would be irrevocably damaged. In addition, Dr. M. Sawas Effendi was the only delegate to abstain from the view that although the "infectiveness" of cadavers of cholera victims was unproven, they should nevertheless be considered dangerous.⁴⁴ Once again, this position was probably espoused by the Iranian delegate, on account of the importance placed by the Shi'i populace of Iran on the burial of the dead in the holy cities of Ottoman Iraq.

Hakim Bashi: Joseph Desirée Tholozan and the Prelude to Sanitary Intervention

Ironically, in the spring of 1866 during the Constantinople Conference (the meetings lasted until September 26), Asiatic cholera renewed its ravages in Iran after a mere five-year hiatus. What distinguished this visitation from its predecessors was that it ushered in one of Iran's longest, continuous periods of pestilence, with cholera raging nationwide from 1866 through 1868, followed by flare-ups in 1869, 1870 and 1872. Moreover, in tandem with this epidemic, the Iranian people were also seized by one of the worst famine periods in their history, making this experience one of Iran's worst demographic disasters.⁴⁵

As early as the winter of 1865, Asiatic cholera's presence in Ottoman Kurdistan, adjacent to Iran's western frontiers, was well known in Tehran's diplomatic circles; however, the Iranian Government took no steps to prevent the flow of the disease into its territory.⁴⁶ This state of inaction continued well into cholera's outbreak within the country's borders in 1866. Public health initiatives in Iran were a reflection of the country's administrative and bureaucratic instability, and, if anything, the late 1860s were an epitome of internal strife and disorganization. For example, the Yamut Torkamans of Iran had been restless for some time, raiding and pillaging villages in northeastern Iran, and this unrest had led to open rebellion against the Shah in 1867. Moreover, the dominance of aristocratic notables in provincial administration and the central Government's reduced authority outside of the Capital⁴⁷ meant that there was little that could be done by Tehran that could have brought to bear the recommendations of the Constantinople Conference. In addition, although formally Nasir al-Din Shah exercised executive monopoly throughout the 1860s, the magnitude of the tasks he had to face meant that in reality neither he nor any of his nominal ministers exercised adequate administrative powers to undertake sanitary reform and defensive measures against contagious diseases.⁴⁸

However, by 1869 the tide began to change for Nasir al-Din Shah's administration. To begin with, after a series of disastrous defeats, the Iranian military began to gain an upper hand over the Turkomans, whom they eventually pacified by the close of the decade. In addition, due to a significant initiative by the Shah, the first telegraph line owned and operated by the Iranian government, was completed between Tehran and Julfa.⁴⁹ More than anything else it was the completion of the telegraphic network in Iran (the British Indo-European line had been operational in Iran since 1865) that allowed the Shah's bureaucracy to extend its authority to the peripheries, eventually bringing to fruition the preventive measures necessary to stem the flow of contagious diseases into Iran. In addition, the telegraph served as a "forward warning beacon" by keeping the Central Government instantaneously aware of the health of neighboring countries; hence, providing them with adequate time to organize defensive measures in the face of a potential threat. In December 1871, for example, after years of repeated complaints to the Iranian Government, the British Resident and Physician at Bushire once again pleaded with the Minister of Foreign Affairs, Mirza Sa'id Khan Mo'Tamen-al-Molk Ansari, for sanitary improvements in Bushire. This prompted Mirza Sa'id Khan to address a dispatch containing orders to the Iranian Agent at Bushire and the Governor of Fars to improve the sanitary state of the port-town.

As I know that Your Excellency [the Governor of Fars] is well versed in the necessities of keeping a town clean, and that you take a personal interest in the salubrity and improvement of places, I consider it sufficient to enclose you a copy of what has been received from the [British] legation. I am fully assured that after a perusal of the same, you will take prompt measures and issue stringent orders, so that a single hour may not be lost in the cleaning and improving of Bushire, which is the largest and most deserving seaport of this Government, and the first place seen by Foreigners.⁵⁰

Mirza Mohammad, the Iranian Agent at Bushire, like his predecessors, attempted to disregard the sanitary orders of the central government by maintaining that the dispatch sent via *chappar* had been lost *en route*.⁵¹ However, with the presence of the Telegraph lines from Tehran to Bushire, Mirza Sa'id Khan was able to immediately repeat his orders to the Agent and guarantee compliance through the use of intimidation and the reliability of rapid communication.⁵²

Should the above orders and the cleanliness of the town of Bushire not be fully carried out, you will see that, God forbid, all at once you have laid yourself open to the evils of a most severe reprimand... What must Foreigners think when they see human beings dying at every step and in every street? Has Islam and a sense of honor totally ceased to exist? Why do not you, who are an employee of the government and a Resident at Bushire, send me any reports? It is evident that you avoid and shirk from business, and that you are lazy and indolent.⁵³

As Mirza Sa'id Khan's dispatches affirm, there was a growing recognition within the Iranian ruling administration of the need for radical sanitary improvement in the country. Moreover, with the growing awareness of the sanitary advances in the west and especially the Ottoman successes in combating epidemics, fatalism and concern gave

way to outrage and shame among the Iranian elite, who sought to end the sanitary status quo in their country. This emerging cognizance was greatly fueled by the efforts of Nasir al-Din Shah's French physician, Joseph Desirée Tholozan, who in August 1869, composed and published his report on the sanitary conditions of Iran.⁵⁴ This report, which presented the history of Asiatic cholera's repeated invasion of Iran, reiterated much of the recommendations of the Constantinople Conference, including the need for an administrative sanitary board in Iran and quarantine measures to impede visitations of cholera in Iran. What distinguished Tholozan from his predecessors was his emphasis on the need for municipal sanitary improvements as a preventive measure and surprisingly, a lack of initiative, on his part, to establish any of the recommendations in his report.⁵⁵ However, there are some indications that Tholozan was responsible for the foundation of a nominal Sanitary Council (*Majlis i Hifz i Sihhat*) as early as 1868. Nevertheless, the limited actions undertaken by this council, composed principally of Iranian physicians, coupled with the infrequency of its meetings resulted in no more than a set of sanitary recommendations addressed to the Shah, which was articulated in Tholozan's *Rapport à Sa Majesté le Shah sur l'état actuel de l'hygiène en Perse*.

Tholozan's disposition should come as no surprise when one considers his intellectual proclivities in the field of sanitary science. Indeed, Dr. Tholozan was a product of the "Hausmann" decade of sanitary engineering in France⁵⁶ and his experience as medical officer at the siege of Sevastopol, during the Crimean War, had strengthened his notions that hygienic undertakings were the main bulwark against contagious diseases.⁵⁷ A Professor "Agrée" at Val de Grace before becoming the Shah's Hakim Bashi and a prolific writer on the subject of public health and sanitary science,⁵⁸ Tholozan was a firm opponent of dogmatic conceptions of contagion as being the primary cause of disease proliferation.⁵⁹ Moreover, Tholozan was also a firm opponent of quarantine measures as a means of stopping the flow of cholera. This opposition stemmed from his belief that the true origin of pandemics of Asiatic cholera in Europe was in the Western countries themselves. This view was in stark contrast to the opinions of the delegates at the Constantinople Conference who had unanimously concluded that cholera was unlikely to ever become endemic in Europe.⁶⁰

I have recently demonstrated, contrary to the assertions of an international assembly composed of very qualified men, that one of the four great epidemics of cholera that have ravaged Europe in the last forty years originated in Europe itself. Today, I propose to examine the question from another angle. I ask myself whether each of these great cholera epidemics could have left in its wake a more or less considerable trail within Europe, which could then initiate the illness if the local or general circumstances would have predisposed it; or rather if unknown causes that created the great epidemics would have been set in motion.⁶¹

Aside from Tholozan's background and intellectual tendencies, his own observation of cholera's yearly outbreaks in Iran from 1866 to 1872 served to convince the good doctor of the futility of restrictive measures to stop the flow.

After its introduction to central Persia, cholera traversed this empire in the following years until 1872. How many times in

the past six years did we expound on the utility of quarantines, saying if only they could be established! I will only make one remark regarding this subject. We have accused Persia of being a breeding-ground for cholera or at the very least as serving as a transit point for the radiation of the epidemics from India. However, in the very epidemic that I just mentioned, it was Russia in the north and Turkey in the west that had transmitted the cholera to Persia. In addition, the visitation, in this last pandemic, remained two more years in certain European countries than in Persia, and moreover I restate that Persia lacked quarantines.⁶²

Indeed, when one looks at Tholozan's theory, that a renewed outbreak of Asiatic cholera arose from "seeds" of the disease left behind by previous epidemics, it is simple to understand his inaction (in spite of his recommendations) during the visitations of cholera in Iran. Moreover, Tholozan felt very strongly that his participation in the administration of public health in Iran should be limited to an advisory capacity and to leave the actual leadership to Iranians lest he infringe on the country's sovereignty.⁶³ It was this moral and professional integrity that characterized Tholozan's 45-year residence in Iran and set him apart from his predecessors and contemporary European physicians who used their medical skills and influence in the Iranian court to further their respective country's diplomatic and commercial interests. Ironically, Tholozan's professional views and reluctance to abuse the trust accorded to him prompted his successor's lukewarm remark that Tholozan "had not done enough to benefit the economic and political interests of his country."⁶⁴

Administering the Guarded Domains: Mirza Husayn Khan Mushir al-Dawala and the Beginnings of Public Health Reform

In September 1870, amidst a cholera outbreak, Nasir al-Din Shah undertook a voyage of pilgrimage to the holy shrines in Ottoman Iraq.⁶⁵ The Shah's purpose in making the pilgrimage was twofold. On the one hand, the trip seems to have been undertaken as a result of a sincere religious motivation.⁶⁶ On the other hand, the undertaking also stemmed from the repeated pleading of his minister, Mirza Husayn Khan Mushir al-Dawala, that the Shah undertake a European voyage to observe the achievements of Western civilization first-hand and this trip to Iraq was potentially seen by the Shah as a stepping-stone to a future, more extensive European journey.⁶⁷ While in Iraq, the Shah was shown many of the reforms enacted by Midhat Pasha, including those in the realm of public works and public health. Indeed, since 1868, Dr. William H. Colvill, Surgeon in the Medical Department of the Government of India, in cooperation with the Ottoman administration in Iraq, had been active in improving sanitation and combating plague and cholera in that province.⁶⁸ Moreover, since the start of his tenure as Governor, Midhat Pasha had engaged in a massive public health project to drain large tracts of marshland bordering the Euphrates in a bid to reduce marsh fever (malaria), an undertaking that could not have gone unnoticed by the Shah.⁶⁹ In addition, the health of Shi'i pilgrims and residents at the holy sites seemed to have been a major issue on Midhat Pasha's agenda of talks with Nasir al-Din during his visit. The Ottoman Governor hoped to convince

the Iranian monarch to endorse his use of the substantial Shrine treasures, which were donated by pilgrims, for the construction of hospitals in Karbala and Nejef. However, the opposition of the Iranian 'ulema to this undertaking caused the Ottoman Governor to abandon his plans.⁷⁰ Though Midhat Pasha's overtures to the Iranians did not bear fruit, there can be no doubt that the Shah's observation of achievements in Iraq were instrumental in inspiring him towards administrative reform in Iran.

Since 1858, Nasir al-Din Shah had effectively monopolized the reins of government by eliminating the office of the *Sadr i 'Azam* and convening a ministerial cabinet that would be responsible directly to him. However, by the close of the decade the Shah realized that he lacked the time and the specialized knowledge needed to supervise the various administrative branches on his own. Furthermore, the threat of Russian encroachments on Iranian territory, together with the ravages of cholera and famine, convinced the Shah of the need to reform the old order.⁷¹ This movement towards reform on the Shah's part began with the appointment, in December 1870, of Mirza Husayn Khan Mushir al-Dawala to the post of Minister of Justice. The Shah's motivation in naming Mirza Husayn Khan to this high office was not unintentional. During his 11 years as Iran's envoy to the Porte, Mushir al-Dawala was a careful observer of the Ottoman reform movement led by the men of the *tanzimat*. In his many dispatches from the Ottoman capital, he described the measures with approbation and pleaded that Iran should follow suit.⁷² In addition, the Shah's pilgrimage to Ottoman Iraq had exposed the monarch to Midhat Pasha's achievements and Mushir al-Dawala had impressed Nasir al-Din with prospects of similar reforms in Iran. Consequently, less than a year after naming Mirza Husayn Khan to the post of Minister of Justice, the Shah decided that he should relegate to him full ministerial powers by naming him *Sadr i 'Azam* in November 1871.

While he was a resident at the Ottoman capital, Mushir al-Dawala was a close observer of the municipal reforms undertaken in Istanbul and the subsequent formation of the Ottoman Sanitary Council.⁷³ Moreover, it is probably as a result of his intervention that an out-of-favor and exiled, but no less astute, Mirza Malkam Khan was made to represent Iran at the Constantinople Sanitary Conference of 1866. Husayn Khan's friendship and respect for Malkam Khan at the time of his residence in Istanbul shows that the Premier placed much import on the sanitary conference to name a trusted councilor to represent Iran. Therefore, there is no doubt that Mushir al-Dawala was aware of both the Conference's recommendations and the sanitary needs of Iran; however, this awareness did not translate directly into action when Mirza Husayn Khan was promoted to the post of *Sadr i 'Azam*. Indeed, disease prevention and public health were conspicuously absent from the agenda of reforms enacted during the two-and-a-half year period between the time of Mirza Husayn Khan's appointment as Minister of Justice (December 1870) and the termination of his Premiership (September 1873). This deficiency becomes even more surprising when one considers that Mirza Malkam Khan, the Iranian representative at the Constantinople Sani-

tary Conference, was Husayn Khan's confidential advisor during his tenure as *Sadr i 'Azam*.⁷⁴ However, with the brevity of Husayn Khan's tenure as Premier and the more pressing administrative problems plaguing the Iranian Government at this time, it is understandable that disease prevention would not be at the top of the new leadership's program.

The lack of an active policy for disease prevention during Mushir al-Dawala's tenure, however, should not be confused with the lack of sanitary initiative, since public works and urban renewal were at the heart of Husayn Khan's reform agenda.⁷⁵ Indeed, Hasan 'Ali Khan Garusi, former Iranian minister to Paris and Mushir al-Dawala's successor in Istanbul, was named Minister of Public Works. Having observed the French and Ottoman plans for improving the conditions of their respective capitals, Garusi was the perfect man to put into effect Husayn Khan's vision of a modernized Tehran. These improvements included the building of a new town wall, parks, fountains, new roads to replace the narrow and unsanitary winding alleys, and the installation of gaslight.⁷⁶ Moreover, burials, previously under religious jurisdiction, were secularized and brought under civil authority so as to promote regulation, thereby alleviating a persistent cause of concern for health authorities.⁷⁷

More than anything else, Mushir al-Dawala's most important contribution to Iranian public health was the consolidation of a stable and ordered administrative structure, which brought the country out of a decade-long bureaucratic limbo led by a reluctant Nasir al-Din Shah. Like Amir Kabir before him, Mushir al-Dawala sought to strengthen the arm of the central government, for he knew that reform could only be enacted within the framework of an organized and authoritative jurisdictional structure. Among the improvements that aided centralization was the Iranian postal service, organized along European lines by an official of the Austrian Post Office hired by Mirza Husayn Khan. By 1877, the Iranian postal service was a member of the International Postal Union and its weekly deliveries linked it to most major western European capitals.⁷⁸ In addition, Mushir al-Dawala's efforts led to the further expansion of the indigenous telegraphic service, linking Tehran with most of the important cities of the Guarded Domain.⁷⁹

If Mushir al-Dawala's authority had not been challenged and the duration of his tenure as *Sadr i 'Azam* not curtailed (he was in power for less than two years) there can be no doubt that he would have intervened energetically in preventing the occurrence of epidemic diseases in Iran. This tendency emerges later in the decade when as Minister of War, Mushir al-Dawala was responsible for the creation of a military hospital and pharmacy under the direction of a European physician.⁸⁰ Mirza Husayn Khan's sanitary efforts in the military realm were an indication of the continuity in the tradition of maintaining the health of a "modern" army whose purpose was to act as the backbone of the central government.

Europe's Fragile Frontier: The Transcaucasian Railway and the Threat of Asiatic Cholera to Europe

The outbreaks of Asiatic cholera, which were diffused throughout Europe between 1869 and 1874, in many ways

spelled the defeat of the measures and agreements undertaken under the auspices of the Constantinople Sanitary Conference in 1866. This was principally due to the prevailing opinion among the European delegates that Muslim Pilgrims and the Red Sea route through Egypt taken by them were the principal centers of transmission of the disease into Western Europe. However, unlike the 1865 epidemic, this most recent outbreak in the West had reached Europe via Persia and through the Caucasian provinces of the Russian Empire. Consequent to this new development, European powers were constrained to a degree of introspection and reevaluation of policy. It was in this environment of skepticism that Tholozan consolidated his "seed" theory of cholera outbreaks in Europe and Asia.⁸¹

Prime among the skeptical nations was England, for not only did she have the largest maritime trade network among nations, but her dominion extended into India, the endemic home of Asiatic cholera. England's investigation into this most recent diffusion of cholera into Western Europe resulted in a detailed report composed by John Netten Radcliffe of the Medical Department of the Local Government Board in London.⁸² By virtue of the Local Government Act of 1871, executive sanitary powers, which had been held by the Privy Council, were gradually transferred to the Local Government Board, making it the highest authority in questions of public health policy in England.⁸³ As a result of this report's important implications, John Simon,⁸⁴ the charismatic leader of the Victorian sanitary movement, felt that it would be of value to concerned nations. Consequently, it was forwarded to the Iranian government and brought to Nasir al-Din Shah's attention.⁸⁵

Interestingly enough, the crux of this report argued against the "seed" theory of Tholozan and others, who maintained that cholera in Russia was not diffused via Persia but was simply a flare-up of a dormant germ from a previous epidemic. The English position in this report was that the increased and facilitated trade between Iran and Russia was the essential causal factor in cholera's spread northwards — a view that held human vectors as the main culprits in the spread of the disease. This position was a far cry from the traditionally "anti-contagionist" British stance. However, while the British seemed reserved on the issue of contagion and quarantine vis-a-vis their trade interests, they had no qualm in blaming other nations, particularly Russia, their commercial and political rival in the region, as being potential gateways for the conveyance of Asiatic cholera into western Europe.

Indeed, since 1864, the traffic of commerce by way of Astrakhan and Trabazon, in which British merchants played a prominent role, was diverted to routes traversing Russian Transcaucasia to the coast of the Black Sea at Poti, and from there to the ports of South Russia.⁸⁶ This novel development was the outcome of better and safer highways from Tabriz to Tiflis and from thence to the Black Sea ports. Yet more than anything else, responsibility for the divergence of trade from Trabazon into Russian hands lay with the imposition of unnecessary restrictions on this trade route by the Ottoman sanitary authorities. In fact, in December 1863, following unfounded rumors of a bubonic plague outbreak

in an Iranian province, the Ottomans imposed strict quarantine restrictions on people and merchandise coming from Iran. Soon afterwards Nasir al-Din Shah's Government, which had been highly vexed by what it perceived as another Ottoman ploy for the extortion and harassment of Iranians, engaged in trade talks with Russia for the conveyance of merchandise through the Caucasus via Tiflis.⁸⁷ What is interesting about this development is that the Russians were able to capitalize on Ottoman apprehensions by giving official sanctions to rumors of the outbreak in Iran and by encouraging Turkish officials to engage in the most rigorous sanitary restrictions.⁸⁸ In addition, the Ottoman authorities saw this opportunity as a means of exploiting foreign merchants by imposing heavy quarantine dues on people and the storage of goods.⁸⁹ Consequently, unwittingly the Ottoman officials played into the Russian hand and were responsible for diverting away a lucrative Iranian trade from their territory into Russia.

Beyond arguing against Tholozan's theory and the "evils" that had resulted from the shift in commercial traffic from Iran to Russia, Radcliffe's report also warned that the most recent cholera epidemics had shown that the ubiquitous presence of railroads in Germany and Eastern Europe had accorded a new velocity and radius to the conveyance of Asiatic cholera. This assessment was said to be especially ominous when taken in view of the impending completion of the Transcaucasian Railway. This line would essentially create a rail link from the Caucasus to Europe and therefore, based on Radcliffe's assessment, it would mean that "contagious current in Persia [*sic*] will become current in Europe."⁹⁰ Henceforth, the internal sanitary state of Iran was inexorably linked with European salubrity, prompting the author to conclude:

From this point of view the internal state of Persia, and the recurring famines which afflict its population, will become a subject of nearer interest and greater moment to European nations than was apprehended even by the international sanitary conference of 1866.⁹¹

Consolidating Opinions: The Vienna Sanitary Conference of 1874

Following the Constantinople Sanitary Conference of 1866, the Ottoman Empire had taken charge of the enforcement of maritime quarantine requirements at the Bosphorous. Russia was the power most affected by this development and after several years of having its commercial shipping subjected to the whim of the Sultan's officials it decided that a reevaluation of maritime sanitary requirements was in order. Consequently, Russia proposed that the European powers should convene a sanitary conference in the hopes of obtaining a more standardized sanitary agreement.⁹² The Ottomans had also proposed a similar international commission to investigate and propose means of mitigating the spread of bubonic plague, which had broken out near its borders in Iran. However, although most of the countries, including Great Britain, agreed with the desirability of convening a conference, "the subject of greater interest to the health of Europe was Asiatic cholera."⁹³

The Austro-Hungarian Government, which had only recently weathered the ravages of Asiatic cholera, took up

these propositions and invited all concerned powers to Vienna. The goal of the conference, as proclaimed by Austria's invitation, was to deliberate upon the best means of stopping the flow of epidemic diseases, such as Asiatic cholera, from one country to another by the adoption of a uniform system of preventive measures to be settled by an international convention of concerned nations.⁹⁴ When this conference opened in Vienna on July 1, 1874, 21 countries were represented, including newcomers, such as Luxembourg, Switzerland, Romania, and Serbia, who were not present at the 1866 Constantinople Congress. Nasir al-Din Shah's former physician, Dr. Jakob Eduard Polak, who had represented Austria in 1866, now represented Iran.

Ostensibly, however, the meetings in Vienna were concerned with a reevaluation of the recommendations and conclusions reached at the Constantinople Conference and for the most part they re-confirmed those findings. These sanctions included the agreement that cholera originated only in India, and that the outbreaks in other countries were always imported from the outside. Moreover, participants reiterated that cholera in Europe had always been a foreign disease, not endemic, and that it never arose spontaneously or from latent repositories.⁹⁵ This unanimous position was especially surprising when one considers that by this time the findings of Dr. Tholozan and Dr. Pelican, the Director of the Imperial Medical Department of Russia, which seemed to substantiate their theory of secondary foci or "seeds" of cholera outbreaks in Russia and throughout Europe.⁹⁶ In addition, the conference floored the question of whether cholera was propagated by humans, a controversial issue, which was voted upon and again supported unanimously with the sole exception of Max von Pettenkofer, who abstained. Pettenkofer declared that although he agreed that man was a vector for the spread of cholera it could not in itself be considered as a propagator of epidemic outbreaks; and that the foci of Asiatic cholera were invariably linked to localities which presented certain agreeable traits in their soil and water properties for the generation of the pestilence.⁹⁷ Although a clear shift away from the "anti-contagionist" philosophy had taken place since the Constantinople Conference, and a significant number of conference participants were opposed to Pettenkofer's views, the latter's status in the scientific community prompted a reformulation of the proposal integrating the local-specific view of cholera propagation which was unanimously favored;

The conference accepts that cholera may be transmittable by men coming from infected surroundings; however it does not consider that man can be the specific source, outside the influence the infected locale; in sum, man is considered as the propagator of cholera only when he comes from an environment where the germ and the illness already exist.⁹⁸

On the issue of whether water could transmit cholera all participants unanimously voted in support of water's culpability; however, the members were divided over the issue of food as a potential source for cholera's transmission. In addition, a number of participants, including Dr. Polak, voted against the question of whether animals could act as vehicles for cholera's transmission to man.⁹⁹ On the issue of merchandise as potential propagators of cholera, once again

the participants were overwhelmingly influenced by their national interest and the countries that had the most to lose as a result of an affirmative vote, such as Iran, Great Britain, Russia, and Serbia, withheld their votes on the question. There was general agreement that cholera was transmissible by wearing infected apparel and to a lesser degree through breathing “polluted” air. While ambient air was seen as the principal generative agent of the disease, fresh air was said to be the panacea for the corrupt atmosphere, capable of cleansing stagnant air of its cholera activity.¹⁰⁰

Although on most etiological issues, this conference agreed with the recommendations of the meeting at Constantinople, members diverged from their predecessors’ conclusion on the question of land quarantine. Indeed, the committee charged with investigating the utility of this restrictive measure, which included Iran’s representative, rejected land quarantine as “unworkable and consequently useless.” Accordingly, the majority of members also sanctioned, in the strongest of terms, the abandonment of this procedure, as being not only prejudicial to commercial interests, but also unfeasible and futile. However, with the exception of a few representatives, the delegates agreed with their predecessors in their assessment of the desirability of sea quarantine being maintained outside Europe. Furthermore, a system of on-board medical inspections for ships docking into European ports was recommended.¹⁰¹

A novel development in this conference was a proposal for the establishment of a “Permanent International Sanitary Commission in Vienna having as its object the study of epidemic diseases.” This committee was depicted as a purely scientific body with the study of cholera as its principal task. A precursor to today’s World Health Organization, this Commission was to be composed of medical representatives from participating countries with a headquarters composed of staff that was to be appointed by the Commission’s delegates. Concurrent to this proposition, the Conference also stressed the need of establishing a *Conseil de Santé internationale* (International Health Council) in Iran, modeled after the existing bodies in Constantinople and Alexandria.¹⁰² However, the skepticism and suspicion of the Great Powers, such as Great Britain, towards these proposals, led to the failure of the scheme. In particular, critics feared that if allowed to materialize without an explicit delineation of its powers, an Iranian health council could give international sanction to restrictive interference with their commercial and colonial interests. These feelings were enunciated in a circular by the British Foreign Minister which was forwarded to the Iranian Government later that year:

With respect to recommendations as to the proposed permanent International Sanitary Commission, Her Majesty’s Government are not in a position, without full details of the manner in which the scheme could be worked, to offer an opinion as to the advantage likely to be derived from such a Commission.¹⁰³

Notwithstanding the opposition of certain powers to the foundation of an international commission in Iran and Vienna, the idea of such a body became a fixture in the minds of Iranian administrators. More than anything else, the conference at Vienna reminded Europeans, once again, that the sanitary welfare of people in the East was inexorably linked

to their own well-being. Although special interests prevented the immediate foundation of an International Sanitary Council in Iran, the fear of Asiatic cholera together with the spirit of cooperation that was fostered by a recognition of mutual interests set the groundwork for the eventual emergence of an international sanitary police in Iran.

Peoples’ Progress: ‘Aliqoli Mirza E’tezad al-Saltana and the Founding of An International Sanitary Consultative Assembly

In the spring of 1874 rumors of a bubonic plague outbreak in Turkish Arabia began to circulate in the diplomatic community of Tehran. Indeed, as much as the Ottoman authorities attempted to hide and stem the plague’s advance, word spread that the disease had appeared at Dargharah, ‘Afaj, Diwaniyah (where it occasioned 400 deaths), at Shinafiyah, and at Umm Nijris. This development in a neighboring country which occurred simultaneously with the recommendations of the Vienna Conference for the establishment of an International Sanitary Council, prompted ‘Aliqoli Mirza E’tezad al-Saltana, the Shah’s Minister of Public Instruction (*wazir i ‘olum*), to call a meeting of *Majlis i Hifz i Sihhat* (Board of Health). This body, which had been nominally formed following the recommendations of the 1866 Constantinople Conference and the efforts of Dr. Tholozan in 1869, was composed of Iranian physicians who met in times of crisis to formulate sanitary recommendations for the Government. However, after repeated invasions of Asiatic cholera and a devastating famine that lasted through 1872, the Shah’s Government came to the realization that it lacked the financial means and experience to undertake the sanitary defense of Iran. This realization came in light of Iran’s porous borders and the near perpetual threat of communicable diseases, whose defense would require an army of paid functionaries. Consequently, following rumors of the plague outbreak in 1874, E’tezad al-Saltana summoned Iran’s first International Sanitary Consultative Council under his Presidency to meet at the Central Government Pharmacy attached to the Dar al-Fonun.¹⁰⁴ Although the assemblage was ostensibly known under its predecessor’s designation of *Majlis i Hifz i Sihhat*, this new Council was radically different in structure. To begin with, the assemblage was composed of Tehran’s principal native physicians, together with the Director of the Dar al-Fonun. In addition, the meetings of the body also included the participation of the Shah’s “Hakim Bashi,” Dr. Tholozan, medical officers of the Foreign Legations, the Ottoman Sanitary Officer in Tehran, and the physicians attached to the British Indo-European telegraph service.¹⁰⁵ However, E’tezad al-Saltana undertook to empower the Iranian Government by withholding any legislative authority from the Council. Yet, he ensured a greater degree of executive cooperation on the part of the European powers by allowing their participation, albeit nominal and advisory, and by directly involving Legation physicians and fostering an environment of mutual interest.

For the most part, this new body remained dormant until 1876, when the imminence of bubonic plague’s extension into Iranian territory was realized. Accordingly, on March 27 the Council met under the Presidency of the E’tezad al-

Saltana.

A warm discussion took place regarding the efficiency of restrictive quarantine measures, one of the principal Doctors, Malek el-a-Tubbah [*sic*] (Prince of Physicians), insisting on the inefficacy of quarantine along a great line of frontier, and stating also that quarantine was ineffectual in keeping cholera out of St. Petersburg.¹⁰⁶

Although consultation and discussions were at the heart of the meetings, the members did undertake tangible measures to stop the flow of an epidemic into Iran for the first time in its history. What is interesting is that these undertakings remained for the most part an "all Iranian affair." This included naming Persian physicians such as Mirza Seyed 'Ali to the post of Chief Sanitary Officer at Bushire and Mirza Esmil at Kermanshah for the purposes of establishing quarantine measures for incoming passengers and goods from infected areas in Turkish Arabia.¹⁰⁷

Although this body met only irregularly during times of national public health crisis, it set a relatively fixed pattern of sanitary policing which was to evolve into the permanent Sanitary Council in 1904 and the Ministry of Public Health in the 1920s. The legacy and continuity of this patriotic and Irano-centric administrative body, begun by E'tezad al-Saltana, was attested to by the physician and Orientalist, E. G. Browne, in his *Year Amongst the Persians*. Browne, travelling across Iran in 1887-1888, informed his readers that the *Majlis i Sihhat* met once a week within the walls of the Dar al-Fonun, and was presided over by Mukhbar al-Dawla, the Minister of Education who had succeeded E'tezad al-Saltana following the latter's death in 1880. Unlike their Ottoman counterparts (who spoke French at the meetings of their Sanitary Council) the Iranians largely conducted their discussion in Persian. Browne described the proceedings as beginning with a report on the death rate of Tehran and the chief causes of mortality in the Capital, followed by presentations on the same in principal provincial towns.

I was very favorably impressed with the proceedings, which were, from first to last, characterized by order, courtesy, and scientific method; and from the enlightened efforts of this center of medical knowledge I confidently anticipate considerable sanitary and hygienic reforms in Persia [*sic*].¹⁰⁸

Conclusion

The inception of a regularly meeting sanitary council [*Majlis i Sihhat*] in 1904 was but one step in a series of developments that would culminate in the establishment of the Ministry of Public Health [*Vizarat i Bihdari*] decades later. However, the maintenance of the population's well-being [*sihhat*] in Iran remains a continuing struggle in an age that has witnessed esurgent epidemics, such as malaria, and more contemporary problems such as a burgeoning demographic trend and the challenges of instituting family-planning measures to stem this expansion. The Iranian Government's distinctive approach to solving its public health predicaments is the most vivid testament to the legacy of its administrative roots in the Qajar era. This heritage, whose foundations were cemented in the patriotic aspirations of a generation seeking to defend its national integrity from European dominion, set the basis for the establishment of a sanitary administration in Iran. However,

institution building and centralization of the administrative structures with respect to public health are but one aspect of modernity in Qajar Iran. Indeed, one cannot ignore the sentiments of nationalism that initiated the momentum towards the establishment of a sanitary council and went hand in hand with the increasing internationalization of Iranian society. This was demonstrated in Iran's participation at the international sanitary conferences, together with 19th century Iran's increased administrative regulation and stability and can be seen as reliable measures by which the advent of modernity in Iran can be appraised.

Notes

¹ Roderic Davidson, *Reform in the Ottoman Empire, 1856-1876* (Princeton: Princeton University Press, 1963); Bernard Lewis, *The Emergence of Modern Turkey* (Oxford: Oxford University Press, 1968); Camal Kafadar, *Between Two Worlds: The Construction of the Ottoman State* (Berkeley: University of California Press, 1995); Albert Hourani, et. al. (eds.) *The Modern Middle East: A Reader* (Berkeley: University of California Press, 1993).

² Fereydoon Adamiyat, *Amir Kabir va Iran* (Tehran: Khawrazmi Press, 1969); Hamid Algar, *Mirza Malkum Khan: A Study in Iranian Modernism* (Berkeley: University of California Press, 1973); Abbas Amanat, *Pivot of the Universe: Nasir al-Din Shah and the Iranian Monarchy* (Berkeley: University of California Press, 1997); Shaul Bakhash, *Iran: Monarchy, Bureaucracy and Reform under the Qajars, 1858-1896* (London: Ithaca Press, 1978); Amin Banani, *The Modernization of Iran* (Stanford: Stanford University Press, 1961); Ann K. S. Lambton, *Qajar Persia: Eleven Studies* (Austin: University of Texas Press, 1987), pp.194-222; Hafez F. Farmayan, "The Forces of Modernization in Nineteenth Century Iran: A Historic Survey," in William R. Polk & Richard L. Chambers, (eds.) *Beginnings of Modernization in the Middle East: The Nineteenth Century* (Chicago: University of Chicago Press, 1966), pp.119-151; David Menashri, *Education and the Making of Modern Iran* (Ithaca: Cornell University Press, 1992); Guity Nashat, *The Origins of Modern Reform in Iran, 1870-80* (Urbana: University of Illinois Press, 1982).

³ Transcending the miseries and shame associated with widespread illness, Iranian reformers came to use epidemic diseases as a metaphor for the portrayal of country's administrative decay and dysfunction.

⁴ It should be recognized that the concept of "health maintenance" or *hifz al-Sihhat* is as old as civilization itself. Nearly every Iranian physician-author since Razi has written a tract or at least dedicated part of a treatise to this subject. Nevertheless, personal hygiene and preventive medicine (whether conscious or ritualized) cannot be confounded with a deliberate state-sponsored public health and contagious disease prevention. Indeed, by its very nature public health is intrusive and authoritarian, irrespective of the will of the individual and its mission lies in promoting the health and welfare of the community even at the expense of individual freedom in decision making.

⁵ Dr. Andrew Jukes, a surgeon of the East India Company, arrived in Iran in 1808 as a member Sir Harford Jones' diplomatic mission. Jukes remained in Iran until his death (probably due to Asiatic cholera) in 1821. He is buried in the Armenian Monastery of Sourp Amenaprgich in New Julfa, Isfahan.

⁶ Abbas Iqbal, "Abilah Kûbî [Smallpox Inoculation]," *Yadigar* 4, 3 (1326)[1947]:69; James Morier, *A Second Journey Through Persia, Armenia, and Asia Minor, to Constantinople, Between the Years 1810 and 1816* (London: Longman 1818), p.191.

⁷ John Malcom, *The History of Persia from the Most Early Period to the Present Times*, vol. 2 (London: John Murrey, 1815), p.383.

⁸ See Schlimmer's work on variolation among Bakhtiyari in the 1870s in Johanne L. Schlimmer, *Terminologie médico-pharmaceutique et anthropologique français-persane, avec des traductions anglais et allemande des termes français* (Tehran: Lithographie d'Ali Gouli Khan, 1874).

⁹ Dr. James Campbell also arrived in Iran as a member of Sir Harford Jones' suite in 1808. An assistant-surgeon to the Mission, he also served in 'Abbas Mirza's army during the latter's campaigns against the Russians. On his return to Tehran, following his service with the Crown Prince, Campbell perished in 1818.

¹⁰ It is interesting to note that this change of heart occurred in the very

same year (1813) when the attempts to inoculate were being forestalled in Tehran: Cyril Elgood, *A Medical History Of Persia and the Eastern Gá-liphate From the Earliest Times Until the Year A.D. 1932* (Cambridge: Cambridge University Press, 1951), p.456; Kentchurch Papers 9016, Lindesay-Bethune to Harford Jones, March 17, 1812; Malcom, *The History of Persia*, p.382; M. Nadjmabadi, "Les relation médicales entre la Grande Bretagne et l'Iran et les médecins anglais serviteurs de la médecine contemporaine de l'Iran," *Proceedings of the XXIII International Congress of the History of Medicine* (London: Wellcome Institute of the History of Medicine, 1974), p.704.

¹¹ Dr. Cormick's treatise was appended to Hakim Qubuli's own works; see: Hakim Mohammad 'ibn-i 'Abd al-Sabur, *Anwar al-Nasiriyah* or *Mir'at al-hikmat al-Nasiriyah* (Tabriz: Lithograph, 1245 A.H. [1829-30 A.D.]).

¹² A survey of the correspondences (in the Ghani Papers at Yale University), between Mohammad Shah and his premier, Mirza Aghasi splendidly illustrates this attribute, to a degree that even the political dialogue between these men reveals an almost poignant concern with sickness (*nakho-shi*) and the menace of new diseases.

¹³ Mohammad Hussein Qajar was later to become Joseph Polak's translator during the latter's ten year residence as medical professor at the Dar al-Fonun; see: Jakob Eduard Polak, *Persien, das Land und seine Bewohner. Ethnographische Schilderungen* (Leipzig: Broukhaus, 1865); Persian trans., *Safarnama i Polak: Iran va Iranianan*, trans. Jahandari (Tehran: Khawrazmi, 1361/1982), p.5.

¹⁴ Mons. Jibril and Mohammad Hussein Qajar, *Risalah dar vaba* (Tehran: Lithograph, 1262 A.H. [1846 A.D.]).

¹⁵ FO 60/126 Keith Abbot to Viscount Palmerston, No. 23, Tabriz: December 6, 1846. Transcripts of unpublished Crown Copyright material in the Public Record Office appear by permission of Her Majesty's Stationary Office (cited as FO hitherto).

¹⁶ It should be recognized that clinical clerkships and rounds were a novel occurrence event in Europe, a trend spearheaded by France at the Hotel Dieu hospital during the first decade of the 19th century.

¹⁷ Johanne L. Schlimmer, *Terminologie médico-pharmaceutique et anthropologique français-persane*.

¹⁸ Jakob Eduard Polak was born in what is today considered the Czech Republic, but was then under the rule of the Austro-Hungarian Empire. He was a member of the first group of instructors at the Dar al-Fonun and lived in Iran between 1851-1860.

¹⁹ Jakob Eduard Polak, *Bimari i vaba* (Tehran: Nast'aliq, 1269).

²⁰ Jakob Eduard Polak, "La médecine militaire en Perse. Par le docteur J. E. Polak, ancien médecin particulier du schah de Perse," *Revue scientifique et administrative des médecins des armées de terre et de mer* vii (1865), pp.649-651.

²¹ *Ibid.*, p.651.

²² Vaqgha i Ittifaghiya, Safar 1267; cited in M. Hassan Beygi, *Tehran i Ghadim* (Tehran: Ghafnoos, 1366 A.H. [1946-1947 A.D.]), p.199.

²³ *Ibid.*

²⁴ Naser al-Din Shah undertook this route during his pilgrimage to Mecca in 1885 see: Mirza Mohammad Hosayn Farahani, English Trans.: Hafez Farmayan and Elton L. Daniel (eds.), *A Shi'ite Pilgrimage to Mecca 1885-1886: The "Safarnameh" of Mirza Mohammad Hosayn Farahani* (Austin: University of Texas Press, 1990).

²⁵ LaVerne Kuhnke, *Lives at Risk: Public Health in Nineteenth-Century Egypt* (Berkeley: University of California Press, 1990), p.65.

²⁶ There is an indication that Dr. Joséph Désiree Tholozan was approached by the conference conveners to represent Iran in Constantinople. However, because Dr. Tholozan felt that such a conference brought to bear important issues of national sovereignty, he voiced the opinion that Iranian representation at the meeting should be fulfilled by a native of the country and not a foreigner, consequently he turned down the offer. But, with the lack of adequate native medical expertise in the field of public health, Iranians had no option but turn to an Ottoman physician to advise Mirza Malkam Khan on sanitary matters, see Persian transcript of Thobzan's response to Dr. Proust in Qasim Ghani, Collection of Qajar Documents, Manuscripts and Archives, Sterling Memorial Library, Yale University. Box 2, 2: 18, (cited as Ghani hereafter).

²⁷ A. Flauvel, *Le Choléra: Étiologie et Prophélie* (Paris: J.-B. Ballière et Fils, 1868), p.91.

²⁸ A. Flauvel, *Le Choléra*, pp.484-490.

²⁹ Pettenkofer dedicated a good deal of his research to the etiology of chol-

era. He postulated that although individuals did indeed transmit cholera to healthy individuals, certain additional predisposition and accessory causes, such as climate, elevation, etc., needed to exist for the epidemic to be propagated. Hence, contagion alone was not the cause for the epidemics of cholera. See Max Joseph von Pettenkofer, *Untersuchungen und Beobachtungen über die Verbreitungsart der Cholera*, (München: J.G. Cotta, 1855).

³⁰ To an extent, the Ottomans fall into this category by default as their sanitary administration was primarily staffed by Spaniards and Italians such as Dr. Bartoletti, who was the Chief Inspector of the Ottoman sanitary service and the Port's representative at the conference.

³¹ The Italian tradition of empiricism via-a-vis cholera was epitomized by Filippo Pacini (1812-1883) whose research indicated the existence of vibrios in the intestines of cholera victims, anticipating Robert Koch's work by 30 years. The "contagionist" position was particularly influenced by the work of John Snow (1813-1858), whose experiments had shown the water-borne character of cholera; see Filippo Pacini, "Osservazioni microscopiche e deduzioni patologiche sul cholera asiatico," *Gazz. Med. Ital. Fed. Tosc.*, 2nd ser. 4, (1854), pp.397-401, 405-412; John Snow, "On the pathology and mode of communication of the cholera," *London Medical Gazette*, 44, (1849), pp.730-732, 745-52, 923-29.

³² A. Flauvel, *Le Choléra*, p.645.

³³ *Ibid.*, pp.648-652.

³⁴ Conférence Sanitaire International, *Rapport sur Les Mesures à Prendre en Orient Pour Prevenir de Nouvelles Invasions du Choléra en Europe* [Août, 1866] (Constantinople: Imprimerie du Levant Herald, 1866), p.53.

³⁵ Conférence Sanitaire International, *Rapport*, p.52.

³⁶ *Ibid.*, p.53.

³⁷ *Ibid.*

³⁸ *Ibid.* The need for a significant European presence reflected the view that Iranians could not be trusted with the efficient operation of this system due to a lack of competence and resolve, which restrictive sanitary measures required.

³⁹ *Ibid.*, p.54.

⁴⁰ *Ibid.*, pp.54-55.

⁴¹ A. Flauvel, *Le Choléra*, p.652.

⁴² N. Howard-Jones, "The Scientific background of the International Sanitary Conferences," *WHO Chronicle* 28 (1974), p.236.

⁴³ N. Howard-Jones, "The Scientific Background," p.239.

⁴⁴ *Ibid.*, p.240.

⁴⁵ Only during the Great War would Iran have a demographic disaster akin to these years; see Amir A. Afkhani, "Disease and Water Supply: The Case of Cholera in Nineteenth-Century Iran," in J. Albert et al. (eds.), *Bulletin Series: Yale School of Forestry and Environmental Studies*, 103 (New Haven: Yale University Press); and my forthcoming article "Compromised Constitutions: The Iranian Experience with the 1918-1919 Influenza Pandemic."

⁴⁶ FO 60/300, Abbot to Clarendon, no. 13, June 10, 1866.

⁴⁷ This development had come about after Amir Kabir's demise as Premier.

⁴⁸ FO 60/258, Alison to Russell, no. 95, Secret, Gulahak, October 13, 1864.

⁴⁹ FO 60/320, Thomson to Clarendon, no. 58, September 22, 1869.

⁵⁰ FO 60/334 Mirza Sa'id Khan Mo'Tamen-al-Molk Ansari to Mohammad Qassim Khan Vali, Tehran, June 22, 1871, encl. 1; in Alison to Granville, no. 84, Gulhak, July 5, 1871.

⁵¹ IO/R/15/1/182 Pelly to Mirza Mohammad Khan, no. 399, Bushire, July 24, 1871. Transcripts of unpublished Crown Copyright material in the India Office Records appear by permission of Her Majesty's Stationary Office (cited as IO hitherto).

⁵² IO/R/15/1/182 Pelly to Mirza Mohammad Khan, no. 390, Bushire, July 21, 1871.

⁵³ FO 60/334 Mirza Sa'id Khan Mo'Tamen-al-Molk Ansari to Mohammad Qassim Khan Vali, Tehran, June 22, 1871, encl. 2 in Alison to Granville, no. 84, Gulhak, July 5, 1871.

⁵⁴ Joséph Désirée Tholozan, *Rapport à Sa Majesté le Chah sur l'état actuel de l'hygiène en Perse* (Tehran: Lithography, 1869); FO 60/323 Earl of Clarendon to Privy Council, no. 50, London, November 13, 1869.

⁵⁵ *Ibid.*

⁵⁶ Baron Hausmann, famed sanitarian and architect of Paris, was responsible for the French capital's renovation, which started in the 1850s under the reign of Napoleon III. This endeavor was motivated in part on the conviction of the city's insalubrity; see David Pinkney, *Napoleon III and*

the Rebuilding of Paris (Princeton: Princeton University Press, 1958).

⁵⁷ Muhammad Hassan Khan I'timad al-Saltana, (ed.), "Jenab i Doktor Tholozan," *Sharaf*, No. 35, 1303 A.H. [1885-1886 A.D.].

⁵⁸ Tholozan's mouthpiece was the *Gazette Medical de Paris* which he edited from 1850 to 1856. After his arrival in Iran, as a corresponding member of the Epidemiological Society of London and Académie de médecine de Paris, Tholozan's theories were primarily disseminated through their respective scholarly journals and proceedings.

⁵⁹ Joseph Desirée Tholozan, "Plague in the Caucasus: A Study in Sanitary Science," *The Practitioner*, XXIII (1879), p.225.

⁶⁰ N. Howard-Jones, "The Scientific Background," p.236.

⁶¹ Joseph Desirée Tholozan, *Durée du Choléra Asiatique en Europe et en Amérique* (Paris: Librairie de G. Masson, 1872), p.2.

⁶² Joseph Desirée Tholozan, "Le choléra et la peste en Perse sans les quarantaines," *Comptes Rendus des Séances de L'Académie des Sciences*, 101 (1885), pp.496-497.

⁶³ Tholozan's to Dr. Proust; Ghani, Box 2, 2:18.

⁶⁴ Docteur Schneider, *Médecine Persane: Les Médecins Français en Perse — Leur Influence* (Paris: Société Anonyme des Imprimeries Wellhoff & Roche, 1911), p.2. It should be remarked that, prompted by his government in 1878, Dr. Tholozan did seek an irrigation concession in Ahwaz for a French firm. The concession, though initially granted, was subsequently cancelled by Nasir al-Din Shah due to British hostility; see FO 60/408, W. Taylor Thomson to Earl of Derby, no. 118, Tehran, December 16, 1878.

⁶⁵ FO 60/326 Alison to Granville, no. 58, Gulhak, September 26, 1870.

⁶⁶ The Shah was set on making this "pilgrimage to Iraq" because he had dreamt of doing so during the plague of 1869-1870 and made a vow to undertake such a trip should he escape the epidemic; Mirza Malkam Khan, *Majmu'a-yi Asar-i Mirza Malkam Khan*, (ed.) M. Muhit Tabataba'i (Tehran, 1328/1949), p.33, cited in Bakhshash, *Iran: Monarchy, Bureaucracy and Reform*, p.74.

⁶⁷ Mirza Husayn Khan, at that time, was the Shah's envoy to the Sublime Porte.

⁶⁸ Joseph J. Malone, "Surgeon Colvill's Fight Against Plague and Cholera in Iraq, 1868-1878," in *American University of Beirut Festival Book*. Fuad Sarruf and Suha Tamim, (eds.), (Beirut: American University of Beirut, 1967).

⁶⁹ Ali Haydar Midhat Bey, *The Life of Midhat Pasha* (London: John Murray, 1903), p.51.

⁷⁰ *Ibid.*, p.53.

⁷¹ Guity Nashat, *The Origins of Modern Reform in Iran, 1870-1880* (Urbana: University of Illinois Press, 1982), p.74.

⁷² Shaul Bakhshash, *Iran: Monarchy, Bureaucracy & Reform under the Qajars 1858-1896* (London: Ithaca Press, 1978), p.44.

⁷³ Steven Rosenthal, "Foreigners and Municipal Reform in Istanbul: 1855-1865," *Journal of Middle Eastern Studies*, 11 (1980), pp.227-245.

⁷⁴ FO 60/342 Thomson to Granville, copy, Tehran, March 20, 1872.

⁷⁵ FO 60/342 Translation of the *Tehran Gazette*, November 21, 1871; encl. 1 in Alison to Granville, no. 2, Gulhak, January 1, 1872.

⁷⁶ Guity Nashat, *The Origins of Modern Reform in Iran*, p.159.

⁷⁷ Shaul Bakhshash, *Iran: Monarchy, Bureaucracy*, p.90.

⁷⁸ Nashat, p.157.

⁷⁹ *Ibid.*, p.158.

⁸⁰ *Mirrikh*, 8 Jamadi ul-Avval 1296/May 30, 1879; cited in *Ibid.*, p.69.

⁸¹ Tholozan, *Durée du Choléra Asiatique en Europe*.

⁸² FO 60/345 Radcliffe to Simon, London, May 7, 1872; encl. 1 in Simon to Granville, no. 417, London, June 8, 1872.

⁸³ J. C. McDonald, "The History of Quarantine in Britain During the Nineteenth Century," *Bulletin of the History of Medicine*, XXV (1951), p.38.

⁸⁴ Dr. John Simon had replaced Edwin Chadwick, a Bentham disciple and father of English "sanitary engineering," as the spokesman and leader of the sanitary movement in mid-Victorian England. More eloquent and tactful than his predecessor, Simon was able to enact a number of laws and measures that transformed public health in England into a more patrimonial system akin to her continental "absolutist" neighbors.

⁸⁵ FO 60/343 Mirza Sa'id Khan to Thompson, Tehran, November 24, 1872; encl. 2 in Thompson to Granville, no. 91, Tehran, December 3, 1872.

⁸⁶ Charles Issawi, "The Tabriz-Trabazon Trade 1830-1900, Rise and Decline of a Route," *International Journal of Middle East Studies*, 1 (1970), pp.18-27.

⁸⁷ FO 60/286 Abbot to Alison, no. 54, Tabriz, December 26, 1863.

⁸⁸ FO 60/286 Abbot to Alison, no. 51, Tabriz, December 11, 1863.

⁸⁹ *Ibid.*

⁹⁰ FO 60/345 Radcliffe to Simon, London, May 7, 1872; encl. 1 in Simon to Granville, no. 417, London, June 8, 1872.

⁹¹ *Ibid.*

⁹² "Editorial" *The Lancet*, 2 (1874), p.20.

⁹³ FO 60/345 Lambert to Secretary of Privy Consul, London, March 18, 1872.

⁹⁴ FO 248/297 Derby to Thomson, circular, London, December 22, 1874.

⁹⁵ E. C. Seaton, "A Brief Account of the Proceedings of the International Sanitary Conference held at Vienna in 1874," *Transaction of the Epidemiological Society of London*, III (1874), pp.556-570.

⁹⁶ See: Tholozan, *Durée du Choléra Asiatique en Europe et en Amérique*, and Dr. Fauvel, [Communication to the Académie de médecine by Dr. Pelican on the recent cholera outbreak in Kiev], *Bulletin de l'Académie de Médecine*, xxxvi (1871), p.649.

⁹⁷ Seaton, pp.556-570.

⁹⁸ *Procès-verbaux de la Conférence sanitaire internationale avertie à Vienne le 1^{er} juillet 1874* (Vienne: Imprimerie impériale et royale, 1874).

⁹⁹ *Ibid.*

¹⁰⁰ *Ibid.*

¹⁰¹ *Ibid.*

¹⁰² *Ibid.*

¹⁰³ FO 248/297 Derby to Thomson, circular, London, December 22, 1874.

¹⁰⁴ FO 881/3332 Beust to Derby, no. 1, Belgrave Square, June 27, 1877.

¹⁰⁵ FO 60/382 Dickson to Thomson, memo., Tehran, April 14, 1876; encl. 1 in Thomson to Derby, no. 45, April 20, 1876.

¹⁰⁶ *Ibid.*

¹⁰⁷ *Ibid.*

¹⁰⁸ E. G. Browne, *A Year Amongst The Persians* (Cambridge: Cambridge University Press, 1959), p.108.