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The Sick Man and his Medicine: Public Health Reform in the Ottoman Empire and Egypt

This paper is submitted in satisfaction of the Food & Drug Law course requirement and the third-year written work requirement at Harvard Law School.

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Abstract

This paper examines the transformation of public health institutions in the Ottoman Empire and Egypt in the nineteenth century. I argue that the region's political, financial, and military vulnerability in that period led to a wide-ranging institutional reform movement that also had a great impact on the public health system. As the state centralized, it began to intervene directly in the lives and bodies of its population with the purpose of developing a strong, healthy polity that would be able to compete in the international arena of states. Examples of this intervention included the establishment of professional medical and pharmacy schools and the implementation of compulsory vaccinations, quarantines, and rigorous inspection of food and drugs in the marketplace. Although these measures were often contested and resisted, and despite a perennial shortage of financial resources, the efforts of nineteenth-century Ottoman and Egyptian statesmen and professionals did lay the groundwork for modern public health care in the Middle East.

Introduction

When the Russian Tsar Nicholas I described the Ottoman Empire in 1853 as the “sick man” of Europe, he was giving voice to the reigning diplomatic assumption of the impending fall of a once great and powerful empire. The Ottoman Empire (1300-1922) had at its apex extended over the entire Middle East, North Africa, and the Balkans and had on two occasions laid siege to Vienna. Istanbul, its capital since 1453, was a vibrant imperial city. But by the nineteenth century, the Ottoman Empire was in military and financial disarray. It no longer posed a threat to Europe’s Great Powers, whose statesmen spent almost a hundred years engaged in debate over the potential consequences of the Ottoman Empire’s anticipated demise.

The paradigm of the “sick man” of Europe gave enduring color to the diplomatic vocabulary of European statesmen, but it might just as well have referred to the actual state of public health in the Middle East at the time. Throughout the Ottoman Empire, the quality of medical care was inadequate, and the central government took limited interest in the health of its people. The sale of food and medicines had for centuries been regulated as part of general commercial regulations whose purpose was to prevent economic fraud and ensure the adequacy of provisions for the capital city and the sultan’s palace. Public hospitals existed, usually under the auspices of religious foundations, but the level of care was not advanced and did not receive much governmental support. The state in general did not see much of a role for itself in the arena of public health.

As part of a wide-ranging reform movement that swept the Ottoman Empire in the nineteenth century, however, the government began to see a connection between a healthy populace and a strong state. Institutional reforms were implemented to modernize the medical and pharmacy professions. The importance of disease

prevention through monitoring the food supply and maintaining public sanitation was realized. Similar modernizing reforms were also introduced in Egypt, which became an autonomous entity of the Ottoman Empire in the early nineteenth century. There was, in other words, a reconceptualization of the state and a willingness to incorporate new ideas about public health into a Middle Eastern context.

Part One: The Ottoman EmpireThe Pre-Nineteenth Century System and the Institution of the Muhtasib

Although market inspection has a long tradition in Islamic law and history, until the nineteenth century the primary motive behind state intervention in the economy was to ensure an adequate supply of provisions (especially for the capital city) and to regulate prices.¹ In every town, a market inspector, or *muhtasib*, would be entrusted to supervise the moral and social behavior, particularly in the markets. In the Ottoman Empire, official regulations (*ih̄tisab kanunnameleri*) codified the duties of the *muhtasib*, which included the supervision and inspection of markets, the punishment of violators, and the levying of taxes. These regulations also specified fixed prices (*narh*) for the sale of commodities and manufactured goods, maximum profit margins, penalties from delinquent merchants and artisans, and market taxes and dues to be collected from guild members. While the regulations were faithful to the religious origins of the *muhtasib* in some respects, for example by calling on him to supervise public morality and adherence to religious duties, the position was essentially a commercial one. The *muhtasib* of Istanbul supervised the division of merchandise between wholesalers, merchants, and artisans; collected all sorts of market taxes, including weighing dues; enforced the official price lists; and generally attempted to prevent fraudulent practices. Until the nineteenth century,

¹Steven Rosenthal, "Foreigners and Municipal Reform in Istanbul: 1855-1865," in *International Journal of Middle East Studies* 11 (1980): 230.

the position of *muhtasib* was farmed out to the highest bidder in accordance with a widespread Ottoman tax farming system. In 1826 the position was made an administrative office that reported directly to the Ottoman government.²

Markets were a central feature of Ottoman towns, and agricultural commerce was the most important sector of the Ottoman economy. International and domestic trade were dominated by agricultural products. In the nineteenth century, Ottoman exports were 90% agricultural, including food products such as grapes, figs, olive oil, nuts, barley, sesame, dates, wheat, and tobacco. Ottoman imports in that period also consisted, in significant part, of food products, including coffee, tea, sugar, and rice. Domestic trade in food was an important part of the economy as well, especially with the urbanization of the empire in the nineteenth century and the rapid growth of large cities like Istanbul, Izmir (Smyrna), and Beirut.³ Towns often had specialized markets for grocers, bakers, pastry and candy sellers, butchers, medicine merchants, and syrup manufacturers. There were also regional variations in the markets for agricultural products, with the Aegean towns having special markets, for example, for chestnuts, apples, and grapes.⁴ Trade in dried fruit, especially currants and raisins, was a particularly important form of commerce, since these products served as sweeteners and the price of cane sugar was extremely high.⁵ Town markets were regulated by the local judge, the *qadi*, who set the price lists, and the *muhtasib*, who enforced the price lists and attempted to ensure order in general, for example by enforcing use of accredited public weighing scales. In smaller Ottoman towns, however, the organization of markets was probably less formal than this traditional framework suggests.⁶ Ottoman trade guilds formed a “key administrative link between the government and the urban population.”⁷ Although the traditional Islamic law framework of the *muhtasib* and the *qadi* takes no account of

²Robert Mantran, “Hisba,” in *Encyclopedia of Islam*, III:485b.

³Donald Quataert, “The Age of Reforms, 1812-1914,” in *An Economic and Social History of the Ottoman Empire*, vol. 2, edited by Halil İnalcık et al., (Cambridge: Cambridge University Press, 1994) 832-837, 848.

⁴Suraiya Faroqhi, *Towns and townsmen of Ottoman Anatolia: Trade, crafts and food production in an urban setting, 1520-1650*, (Cambridge: Cambridge University Press, 1984) 32.

⁵Faroqhi, *Towns and townsmen of Ottoman Anatolia*, 81, 214.

⁶Faroqhi, *Towns and townsmen of Ottoman Anatolia*, 58.

⁷Gabriel Baer, “The Administrative, Economic, and Social Functions of Turkish Guilds,” *International Journal of Middle*

trade guilds, guilds became quite prevalent in the Ottoman Empire. Guilds conveyed government orders and announcements to their members and assumed some responsibility for implementing these orders. One main task of the guilds was to control the quality of products and weights and measures, but the extent to which they were self-regulating is debatable. The government, in the form of the *muhtasib* and the *qadi*, continued to have the legal authority to regulate quality, weights and measures, and prices. In Anatolia, the guilds merely implemented these regulations and brought violators to the attention of the *muhtasib* and the *kadi*, who then had the authority to punish them.⁸ Farther away from the Ottoman capital, in Syria, where the guilds appear to have been more independent, the position of the *muhtasib* declined somewhat and the guilds played a significant role in actually setting prices and standards for their products.⁹ Guild membership was not always a prerequisite for merchants and artisans to sell their wares. Migrants from the countryside often found itinerant peddling to be an accessible means of earning a livelihood once they entered an urban area. Peddlers did not usually pay the dues and taxes levied on shops and market stalls, so they could offer lower prices. Peddlers also enjoyed a degree of freedom from the scrutiny of the *muhtasib* and the guilds, but their economic existence was somewhat marginal.¹⁰ Guild membership was still the preferred route for a merchant to take, and guilds did what they could to exert authority over their members. Although the guilds' independent ability to control the quality of the goods that their members produced and sold differed in the diverse regions of the Ottoman Empire, they did play an important intermediary role in the Ottoman system of market regulation until the nineteenth century.

Beyond the regional regulation by the *qadi* and the *muhtasib*, a significant regulatory concern of the Ottoman state was to ensure adequate provisions for the capital. Provinces were generally expected to be self-sufficient agriculturally, but the capital required greater quantities for its large population and better quality for the

East Studies 1 (1970): 33.

⁸Baer, "The Administrative, Economic, and Social Functions of Turkish Guilds," 35-37.

⁹Abdul-Karim Rafeq, "Craft Organization, Work Ethics, and the Strains of Change in Ottoman Syria," *Journal of the American Oriental Society*, vol. 111 (1991), 505-506.

¹⁰Faroqhi, *Towns and townsmen of Ottoman Anatolia*, 281-282.

imperial palace. The Ottoman government had to worry, for example, about whether smugglers who sought to export valuable raisins to Europe were depriving the capital of necessary supplies.¹¹ A source of particular challenge for Ottoman administrators was maintaining the meat supply in the capital. Meat prices had to be set very low in the provinces, especially in the Balkans, so that owners would be compelled to drive their sheep all the way to the capital if they wanted to secure a satisfactory price for them.¹² The central government, which had enormous needs for the capital, including the army and the palace, was also quite actively involved in the regulation of grain distribution and prices, although its ability to control prices declined by the nineteenth century as a result of the empire's incorporation into the larger world economy.¹³ Adulteration of food in the marketplace was a concern of the guilds, the *muhtasib*, and the *qadi*. When poisonous food was sold and consumers became ill, authorities did intervene, but such incidents were dealt with entirely on the local level, as part of the general criminal law rather than under any kind of public health agency. In 1787, for example, a baker in the Eastern Mediterranean city of Aleppo was arrested and interrogated for selling poisonous, adulterated bread that killed three consumers and made several others ill. More often than not, however, the offense was framed in terms of economic harm rather than as a threat to public health. For example, in 1770 the juice sellers of Aleppo were brought to the local *qadi*'s court accused of adulterating the drinks that they sold. They were found to have violated the market rules by cutting the amount of sugar and flavorings in the juices, and by adding flour instead. This violation did not pose a threat to public health, although it was a threat to public confidence in the guilds and the markets. Food producers and merchants occasionally invoked public health as a rationale for keeping upstart competitors' new products off the market, but economic interests were often what was really at play.¹⁴

¹¹Faroqhi, *Towns and townsmen of Ottoman Anatolia*, 82.

¹²Faroqhi, *Towns and townsmen of Ottoman Anatolia*, 221-222.

¹³Bruce McGowan, "The Age of the *Ayans*, 1699-1812," in *An Economic and Social History of the Ottoman Empire*, vol. 2, edited by Halil İnalcık et al., (Cambridge: Cambridge University Press, 1994) 720-721.

¹⁴Abraham Marcus, *The Middle East on the Eve of Modernity: Aleppo in the Eighteenth Century* (New York: Columbia University Press, 1989), 263-264.

Regulation of the food supply was thus of great concern and importance to the Ottoman Empire, but its regulations were generally limited to economic concerns like preventing fraud and securing adequate supplies for the capital. Local merchants and guilds also found ways to use market regulation to their advantage, as a barrier to unwanted competitors. Until the nineteenth century, there were no special regulations for food and drug producers and merchants. Instead, the general laws of the marketplace, which equated consumer protection with the prevention of economic fraud, applied equally to food and non-food sellers. Although public health must certainly have been a concern at the community level, it was not a driving force behind market regulation. The stated objective of Ottoman marketplace regulation was a commercial, and the Ottoman government did not yet conceive of public health regulation as an appropriate role for itself.

From about the 1830s on, the Ottoman Empire underwent a large-scale government reform movement known as the Tanzimat. The main thrust of the Tanzimat was to centralize, modernize, secularize, and Westernize Ottoman institutions. The justice system, the armed forces, taxation, and education were the key sectors that were affected by the Tanzimat. Government bureaucracy expanded considerably.¹⁵ These reforms affected the traditional means by which commerce was conducted. The position of *muhtasib*, for example, was abolished in 1854. Market inspection duties were transferred to a new institution that encompassed a wide array of municipal services.¹⁶ The trade guilds, which had been an important component of the Ottoman commercial landscape, began to decline as the centralizing government flexed its authority to supervise the marketplace, inspect the quality of goods, and fix prices.¹⁷

In the mid-nineteenth century the Ottoman capital witnessed an influx of visitors from Europe. An 1838 Anglo-Ottoman commercial treaty paved the way for a vast expansion of foreign trade and the emergence

¹⁵Roderic Davison, "Tanzimat," in *Encyclopedia of Islam*, X:200a.

¹⁶Robert Mantran, "Hisba," in *Encyclopedia of Islam*, III:485b.

¹⁷Rafeq, "Craft Organization, Work Ethics, and the Strains of Change in Ottoman Syria," 506.

of a successful merchant class of resident foreigners and Ottoman non-Muslims. The Crimean War of 1854-1856 also brought to Istanbul a number of British and French soldiers and personnel who fought on the side of the Ottomans against Russia. Some of these foreigners remained in Istanbul after the war to pursue trade opportunities. Bringing with them their knowledge of recent urban planning practices adopted in Europe, they began to demand a higher level of municipal service in the Ottoman capital.¹⁸ The 1854 establishment of the position of city prefect, or *şehir emini*, was partly a response to these demands. The *şehir emini*, whose duties included some of the older functions of the *muhtasib*, personally supervised and inspected guilds and merchants, prices, cleanliness of markets, and the condition of streets and bazaars. In 1859 a municipal council, comprised principally of Europeans and non-Muslim Ottomans was set up to advise the *şehir emini* on activities in the European district of Istanbul. The municipal council focused its attention on an ambitious program of reform. Activities included refuse collection, street lighting, a ban on ambulatory peddlers, and the creation of central fish and vegetable markets. The municipal council also proposed detailed rules and procedures for the inspection of commercial goods. These included codes for bakeries, butcher shops, pharmacies, wine shops, public baths. Particularly detailed codes for food sellers and candy manufacturers specified the lawful composition and purity standards for these products. The council, however, had little success initially in implementing and enforcing its reforms, particular due to a lack of adequate funding. Gradually, however, the council's effectiveness increased as the Ottoman state involved itself more directly in the affairs of the council, reducing the influence of Europeans and strengthening its financial position.¹⁹

¹⁸Rosenthal, "Foreigners and Municipal Reform in Istanbul: 1855-1865," 228-230. See also Stefanos Yerasimos, "Şehir Emaneti," in *Encyclopedia of Islam*, IX:413a.

¹⁹Rosenthal, "Foreigners and Municipal Reform in Istanbul: 1855-1865," 237-240.

The Emergence of State Intervention in Public Health

The Ottoman Empire had a long history of tending to the health of its population through subsidized health institutions. Sultans endowed religious charitable foundations that sponsored medical and social service complexes. Before the nineteenth century, the primitive state of medical practice around the world meant that disease prevention was by far the most effective health care strategy. For this reason, although doctors did perform procedures and prescribe remedies, diet and nutrition were perhaps the most important contributions made by Ottoman hospitals. In fact, records show that the most significant portion of hospitals' expenses went simply to the provision of food for patients. There is also evidence that the state attempted to regulate public nuisances, such as slaughterhouses, that could pose a threat to sanitation and health. Many medical relationships, however, were conducted privately, without state regulation or supervision. Home remedies were a very common way for people to receive treatments for ailments. Hospitals were overcrowded, and professional care could be expensive. Furthermore, there was quite a bit of risk involved in a visit to the hospital, where procedures frequently led to infections and other complications. This latter factor, of course, was true in Europe as well, where medicine was similarly at a "premodern" level until some time in the nineteenth century.²⁰

The Ottoman institutional reforms of the nineteenth century, known collectively as the Tanzimat, brought about a reconceptualization of the state and its role in society. The impetus for these reforms, however, was often military or economic necessity rather than a purely internal dynamic. An indicator of this phenomenon

²⁰Rhoads Murphey, "Ottoman Medicine and Transculturalism from the Sixteenth through the Eighteenth Century," *Bulletin of the History of Medicine* 66 (1992): 379, 387-388.

in the public health arena is that it was the military that opened the first official medical school in the Ottoman Empire in 1827. The Imperial Military College of Medicine, which was reorganized in 1839, was run by an Austrian physician and followed the curriculum of contemporary European medical schools. It included pharmacy studies and published the first Ottoman pharmacological codex, the *Pharmacopée Militaire Ottomane*. Although its instruction was conducted in French until 1870, the Military College of Medicine undertook to translate medical texts into Turkish. A Civil Medical College was not established until 1867.²¹ The late nineteenth century brought increased attention to medical and scientific research as well. Sultan Abdülhamid took great interest in the work of Louis Pasteur and funded a Rabies Institute in Istanbul in 1887. In 1893 European experts were invited to supervise Istanbul's new bacteriological laboratory (*Bakteriyolojihane-i Osmani*), where Ottoman doctors were trained in bacteriology. The goal of the laboratory was to perform research that would ultimately lead to preventative strategies to benefit public health.²²

Its overt military origins notwithstanding, the College of Medicine produced an elite community of physicians, surgeons, pharmacists, and veterinarians who sought to make an impact beyond the armed forces. These medical officers formed the first Ottoman professional associations, publishing journals and promoting medical causes. The first medical association in Istanbul was actually established in 1856 by an English physician who had come to the Ottoman Empire as part of the allied forces in the Crimean War. Although this association (*Société Médicale de Constantinople*) generally excluded local Muslim physicians from its membership, local Muslims soon followed its lead and in 1861 established their own medical association,

²¹Emre Dölen, "Tanzimat'tan Cumhuriyet'e Bilim," in *Tanzimat'tan Cumhuriyet'e Türkiye Ansiklopedisi*, edited by Murat Belge, vol. 1, (Istanbul: İletişim Yayınları, 1985), 168-170.

²²Nuran Yıldırım, "Tanzimat'tan Cumhuriyet'e Koruyucu Sağlık Uygulamaları," in *Tanzimat'tan Cumhuriyet'e Türkiye Ansiklopedisi*, edited by Murat Belge, vol. 5, (Istanbul: İletişim Yayınları, 1985), 1335-1336.

which was open to non-Muslims as well.²³ Pharmacists also established professional associations. As was the case with physicians, foreign and non-Muslim pharmacists established the first pharmaceutical society in 1879. This association, the *Société de Pharmacie de Constantinople*, was very active in promoting the enactment of a law that regulated the work of pharmacists and pharmacies, set a price list for medicines, limited the number of pharmacies, forbade the sale of drugs outside pharmacies, and adopted an official codex. Muslim pharmacists would not form their own professional association until 1908.²⁴ These professional associations played an important role in reconceptualizing the Ottoman state and modernizing Ottoman public health institutions.

Although the most prominent Ottoman medical professional associations were confined to the Ottoman capital, medical reforms were felt in the provinces as well. Throughout the nineteenth century, traditional and folk medical practices were gradually eroded in regional centers like Aleppo. Graduates of European medical schools and of the College of Medicine in Istanbul began practicing in cities outside the capital, and modern hospitals were built. Modernization of medicine and pharmacy was a gradual process in the provinces, however, and traditional cures and practices continued to be pursued alongside their modern, European counterparts into the twentieth century.²⁵

Regulation of Pharmacies

Until the nineteenth century, the sale of drugs was regulated according to the traditional Islamic system of the *muhtasib*, the *qadi*, and the guilds. Merchants known as druggists or herbalists (*aktar*) sold a wide

²³Ekmeleddin İhsanoğlu, "Genesis of Learned Societies and Professional Associations in Ottoman Turkey," *Archivum Ottomanicum* 14 (1995/96): 171-172.

²⁴İhsanoğlu, "Genesis of Learned Societies and Professional Associations in Ottoman Turkey," 174.

²⁵Abraham Marcus, *The Middle East on the Eve of Modernity: Aleppo in the Eighteenth Century*, 268.

range of botanical and chemical remedies. In Istanbul, most of the city's herbalists were located in what was known as the Egyptian Bazaar. The Egyptian Bazaar was a large covered market built in the seventeenth century that housed about a hundred shops, half of which belonged to herbalists. (The other half sold cotton goods, mostly from Egypt, hence the name). All of the merchants in the bazaar were linked to guilds and operated under the general supervision of the *muhtasib* and the *qadi*. Herbalists prepared and sold drugs, dyes, prescriptions for home remedies, and medical supplies.²⁶ Another common way for people to buy medications was from the numerous itinerant salesmen who prepared and sold medical products in Istanbul and throughout the empire.²⁷ These itinerant peddlers must have enjoyed far less state and guild regulation than their counterparts in the Egyptian Bazaar, but their livelihood was also more precarious. Although the sale of medicines was regulated by the traditional mechanisms of the guilds, the *muhtasib*, and the *qadi*, the quality of products was not always reliable. One way that residents of Istanbul had tried to secure better quality medicines was to purchase medicines prepared in the Sultan's palace. The production of these medicines was subject to stricter regulation, and they were available to locals, for a price.²⁸

Medicines were also in some cases available free of charge from charitable institutions such as the Süleymaniye Mosque complex (*küllüye*), built in 1556 by the Sultan Süleyman II (the Magnificent). The Süleymaniye functioned as a public center with an array of social institutions such as a soup kitchen, infirmary, market area, and a pharmacy. The Süleymaniye pharmacy served as the Ottoman capital's central warehouse for drugs, distributing medicines directly to indigent patients and also to other charitable hospitals and infirmaries.²⁹

²⁶ Ayşegül Demirhan Erdimir, "The Place and the Importance of Mısır Çarşısı (Spice Bazaar) in Ottoman-Turkish Medicine," in *The Great Ottoman-Turkish Civilization*, ed. Kemal Çiçek, vol. 3, (Ankara: Yeni Türkiye, 2000), 448-449, 451.

²⁷ Bayhan Çubukçu, "The Importance of Pharmacy and the Free Dispensation of Medicines to the Public within the Ottoman Health System," in *The Great Ottoman-Turkish Civilization*, ed. Kemal Çiçek, vol. 3, (Ankara: Yeni Türkiye, 2000), 472.

²⁸ Çubukçu, "The Importance of Pharmacy and the Free Dispensation of Medicines to the Public within the Ottoman Health System," 475.

²⁹ Çubukçu, "The Importance of Pharmacy and the Free Dispensation of Medicines to the Public within the Ottoman Health System," 472, 477.

Nineteenth century modernization, however, established an entirely new dynamic for this traditional form of commerce in medicines. Professional pharmacists who had graduated from the Imperial College of Medicine increasingly dominated the sector, pushing out the traditional purveyors of medicine. The government continued to provide free medicine for indigents, as the Süleymaniye mosque had done, but the College of Medicine took over as Istanbul's central pharmacy facility. Medicines were prepared in the college's central pharmacy, which was open to the public five days a week. The pharmacy was also responsible for free vaccination services for children.³⁰ In many ways, the new pharmacy at the College of Medicine continued an old tradition of government dispensation of medicines, but a new twist of modern professionalism had emerged. The pharmacy was no longer linked to the traditional mosque complex but was instead part of a broader modernized and secularized educational, scientific, and professional structure.

An 1862 regulation set detailed standards for the licensing of pharmacists and the practice of pharmacy in Istanbul. Pharmacists were strictly prohibited from giving medical advice or practicing medicine in any way. The sale of "active medications" required a prescription signed by a licensed physician, surgeon, or veterinarian, and only pharmacists who were licensed by the Imperial College of Medicine were able to fill physicians' prescriptions. All pharmacists' preparations were furthermore strictly to adhere to the official guidelines of the Codex of the Imperial College of Medicine. The Directorate of Medical Affairs established a standard of uniform weights as well as an official list of medications that pharmacies were required to keep on hand. All medications were to be carefully classified, and pharmacists were to ensure that they were stored in sanitary conditions so as to prevent adulteration in any form. "Highly toxic" substances were to be stored separately and kept under lock and key. In order to fill a prescription, a pharmacist was required to verify the name of the physician, surgeon, or veterinarian who signed the prescription against an official list of such practitioners who were licensed by the College of Medicine. Detailed provisions on the labeling

³⁰Çubukçu, "The Importance of Pharmacy and the Free Dispensation of Medicines to the Public within the Ottoman Health System," 475.

of medications not only required that the label explain the usage to the patient, but also included such standardizing features as mandating white labels for internal use and orange labels for external use.³¹

These stringent regulations were to be enforced by a comprehensive inspection regime. Regular inspections of pharmacies were to occur every six months, but these would be supplemented by “extraordinary” inspections at unspecified intervals. The teams of inspectors would consist of three members appointed by the College of Medicine and would be assisted by an agent of the municipal authority or the police. Inspectors had authority to examine the entire premises, including the medications and other merchandise, the laboratory, storage areas, weights and measures, instruments, and register books. Teams of inspectors had provisional authority to seize any suspicious goods, and the School of Medicine was given jurisdiction to make findings on violations of the pharmacy regulation.³²

The regulation furthermore set forth fines and penalties for violations. The penalty for the illegal practice of pharmacy was closure of the dispensary and a monetary fine. Licensed pharmacists who violated provisions of the regulation were subject to a range of disciplinary sanctions, including total seizure of objects in contravention of the regulation, a monetary fine, closure of the offending pharmacist’s dispensary for up to three months, suspension of the offending pharmacist’s license for up to two years, and/or complete revocation of a pharmacist’s license. Specialized tribunals consisting of pharmacists were established by the Imperial Council of Medicine to set the degree of a penalty in a given case, taking into account the significance of the violation, recidivism, and attenuating or aggravating circumstances.³³

³¹Regulation on the practice of civil pharmacy, 7 Cemâziyelâhir 1279, 30 November 1862. George Young, *Corps de Droit Ottoman: Recueil des Codes, Lois, Règlements, Ordonnances et Actes les plus importants du Droit Intérieur, et d’Études sur le Droit Coutumier de l’Empire Ottoman*, vol. 3 (Oxford: Clarendon Press, 1905), 199.

³²Regulation on the practice of civil pharmacy, 7 Cemâziyelâhir 1279, 30 November 1862. Young, *Corps de Droit Ottoman*, vol. 3, 199.

³³Regulation on the practice of civil pharmacy, 7 Cemâziyelâhir 1279, 30 November 1862. Young, *Corps de Droit Ottoman*, vol. 3, 199.

These detailed restrictions on the practice of pharmacy might have struck drug merchants as burdensome limitations in light of the largely unregulated environment in which they had previously practiced. The prohibition against the practice of medicine by pharmacists and the requirement that physicians write prescriptions for an entire class of medications erected a professional stratification that seems natural to us today. At the time, however, its most obvious effect must have been to rein in the ability of drug merchants to dispense their wares to customers. But the new regime was not a setback for all drug merchants. By putting explicit limitations on the sale of pharmaceuticals, it privileged a new class of licensed pharmacists who would benefit from a monopoly over the dispensation of medications to patients. Other drug merchants like the druggists or herbalists would eventually survive only in a curtailed and emphatically less prestigious and lucrative domain.

The 1862 regulation's only mention of druggists and herbalists was to say that they were not authorized to sell active medications, but a series of regulations between 1883 and 1885 delineated the functions they were permitted to assume. Druggists were wholesale merchants of pharmaceuticals. They were licensed by municipal authorities and were strictly prohibited from selling medications directly to patients. Druggists were permitted to sell active medications, but only to licensed pharmacists. Regulations provided for proper record-keeping practices, the safeguarding of poisons, and set up a regime of inspections and legal penalties.³⁴ Herbalists were strictly prohibited from selling any active medicines whatsoever. They could only sell remedies that were considered harmless enough for self-medication.³⁵ The regulations enumerated a list of medicines that herbalists were permitted to sell and likewise prohibited the sale of certain named substances.³⁶

By the end of the nineteenth century, the herbalists and druggists had been relegated to a marginal role while

³⁴Regulation on druggists, 22 Receb 1302, 7 May 1885. Young, *Corps de Droit Ottoman*, vol. 3, 209.

³⁵Regulation on herbalists, 22 Receb 1302, 7 May 1885. Young, *Corps de Droit Ottoman*, vol. 3, 210.

³⁶Erdimir, "The Place and the Importance of Mısır Çarşısı (Spice Bazaar) in Ottoman-Turkish Medicine," 453.

a new class of pharmacists established itself professionally and gained the government's support. Starting in 1839, when the Imperial College of Medicine first included pharmacy training in its curriculum, the Ottoman Empire embarked on a reconfiguration of the ways that medicines were distributed and consumed. The existence of an elite, highly educated, and politically powerful class of professional pharmacists led to state intervention in pharmaceutical commerce. The new system had little room for purveyors of medicines who were not connected to a network of government regulations and an established medical profession. Eventually, the herbalists became known as spice sellers (*baharatçi*), and the Egyptian Bazaar in Istanbul is known today for its numerous merchants of spices, herbs, sweets, coffee, and tea, although the occasional herbal remedy can still be found.

Municipal Regulation of Public Health

The 1877 Provincial Municipal Law, which restructured local government throughout the Ottoman Empire, entrusted municipalities with significant public health duties. The law was an attempt to extend the experiment in municipal reform in Istanbul throughout the empire. The general duties of municipal councils covered a wide array of public health responsibilities, including: the removal of refuse, the establishment of suitable public markets, the supervision of inns, coffee shops, festivals, and other public places, the verification of the weight and cleanliness of bread and flour, the prohibition of the sale of spoiled meat, and the supervision of sanitation in slaughterhouses. More specifically, municipalities were instructed to prevent: the use of untinned copper vessels in restaurants; the cooking of food on makeshift braziers in shops; the slaughter of weak or sickly animals; the sale of fowl or poultry with inflated breasts; the sale of spoiled meat, fruit, or other food; the sale of adulterated coffee, butter, or other food; the sale of adulterated bread or bread that was short in weight; the presence of wet skins, bones, horns, and other harmful materials in

shops; the cooking and sale of meat in pans in the street; and the presence of inflammable or unsanitary articles in bread or pastry shops.³⁷

Although municipal government, and not the central government, was the primary enforcer of public health standards under this system, the presence of a national law setting the standards for public health and hygiene is significant. With the 1877 Provincial Municipal Law, the central government thrust itself into the field of public health, even if it would rely on municipalities to work out the details and to exercise primary enforcement power.

Diseases

From the time of Istanbul's first cholera epidemic in 1831 onward, the threat of cholera defined the public health landscape of the Ottoman Empire. In fact, the first and most important large-scale public health measure taken by the Ottoman government in that period was the establishment a quarantine for ships during times of cholera. Cholera continued to afflict the Middle East in the nineteenth century, particularly as increased travel by sea brought more and more Muslim pilgrims from India, where cholera was endemic, in contact with others who traveled to Mecca for the yearly Muslim pilgrimage. European countries began to fear the spread of cholera there as well. The collective response was the 1866 International Health Congress, which convened in Istanbul and sped up anti-cholera reforms in the Ottoman Empire. Quarantine stations were modernized and made active throughout the empire. A health delegation was sent to Mecca each year during pilgrimage season, and in 1895 a permanent health institution was set up in Mecca. During the 1893

³⁷Vilayet Municipal Law, 27 Ramazan 1294, 5 October 1877. *Translations of the Ottoman Constitutional Laws* (Baghdad, 1921). At Harvard Law Library, Microform NE 1602.

cholera epidemic, fumigation stations were also set up in Istanbul and the provinces.³⁸

Syphilis was another disease that commanded the attention of Ottoman administrators, who were distressed at its prevalence, particularly among members of the armed forces. An 1879 regulation enacted mandatory health examinations of prostitutes, who were thought to be the source of the syphilis problem. The military connection is well illustrated by the response of the German General Colmar von der Goltz, who came to the Ottoman Empire as a military advisor in 1883 and was later given the title Pasha for his services. Upon learning of the prevalence of syphilis among cadets in the Ottoman military, he insisted that measures be taken. A German physician, Ernst von Düring, was brought to the Ottoman Empire to supervise an anti-syphilis program. Düring spent over a decade (1889-1902) training medical providers in Istanbul and throughout Anatolia on the diagnosis and treatment of syphilis.³⁹

For centuries, smallpox caused devastation in the Middle East, as it did in other parts of the world as well. Until Edward Jenner's cowpox vaccine was invented in Gloucestershire, England in 1796, people in Anatolia and other parts of the Middle East relied on the East Asian practice of variolation to prevent smallpox. After Jenner's findings were published, and throughout the nineteenth century, the Ottoman state made several attempts to promote smallpox vaccination. The College of Medicine was put in charge of smallpox vaccination in 1839, and an 1840 law decreed that smallpox vaccine should be available free of charge. Despite unsuccessful attempts to produce the vaccine locally, the Ottomans continued to import the vaccine from Europe. An 1845 smallpox outbreak in Istanbul led to the creation of vaccination outposts throughout the city and to a program to bring students from the provinces to the College of Medicine to train them in vaccination techniques. A central Vaccine Inspectorate was set up in 1872 to supervise the distribution of smallpox vaccine.⁴⁰

³⁸Yıldırım, "Tanzimat'tan Cumhuriyet'e Koruyucu Sağlık Uygulamaları," 1322-1325.

³⁹Yıldırım, "Tanzimat'tan Cumhuriyet'e Koruyucu Sağlık Uygulamaları," 1329-1330.

⁴⁰Yıldırım, "Tanzimat'tan Cumhuriyet'e Koruyucu Sağlık Uygulamaları," 1334.

Centralized Food and Drug Inspections

In 1881 a Health Council (*Meclis-i Sıhhiye-i Umumiye*) was founded to coordinate some of these disparate strands of public health regulation. The Health Council was entrusted with a wide array of responsibilities. It was to do general research on public health in the Ottoman Empire, make recommendations to the government for prevention of infectious diseases, and exercise jurisdiction over the production, sale, and import of food, drinks, and medicine.⁴¹ This Health Council worked in coordination with the College of Medicine to supervise public health in general, and its power increased as state intervention in public health and the food supply increased more and more towards the end of the century.

An 1885 regulation established a Commission of Inspection charged with inspecting foodstuffs, drinks, and medicines in the interest of protecting public health. This commission was given the responsibility to inspect foodstuffs in general, and “especially fresh butter, lard, olive oil, and drinks.” The commission was to ensure that products used in factories were not adulterated and that sanitary conditions were present in tanneries, slaughterhouses, and butchers’ shops. The commission had the authority to seize and confiscate meat that could potentially be contaminated in these circumstances, and to initiate prosecutions against violating vendors.⁴² The Commission of Inspection also took charge of inspecting the establishments of pharmacists, druggists, and herbalists to prevent the sale of illicit or harmful medications and to enforce compliance with the new pharmacy laws and regulations. Spoiled, adulterated, or harmful medications were immediately to be seized and destroyed unless the proprietor sought an appeal. If the proprietor objected to the seizure, he had recourse to an appeal to the College of Medicine.⁴³

⁴¹Yıldırım, “Tanzimat’tan Cumhuriyet’e Koruyucu Sağlık Uygulamaları,” 1320.

⁴²Instructions for the Commission of Inspection, 25 Haziran 1301, 7 July 1885. Young, *Corps de Droit Ottoman*, vol. 3, 213.

⁴³Regulation on inspection and chemical analysis, 2 Şaban 1301, 28 May 1884. Young, *Corps de Droit Ottoman*, vol. 3, 214.

The 1884 and 1885 inspection regime drew fierce criticism and protest from the European Powers. This opposition seems somewhat ironic in light of the fact that so much of the Ottoman reform movement is credited to European inspiration, but Europeans had enormous commercial interests in the Ottoman Empire included the export of pharmaceuticals, alcoholic beverages, and other food and drug merchandise. European exporters felt that the Commission of Inspection's powers to confiscate goods were exercised arbitrarily to prevent imports from Europe.⁴⁴ The empire's response was a 1900 regulation that laid out a detailed procedure for the inspection of imported goods arriving in all Ottoman ports. The 1900 regulation applied to chemicals and pharmaceuticals, foods and drinks, and cosmetics. The procedure for inspecting imported merchandise was expedited and fees were reduced. Inspections were to take place within one to two days at the port of entry. Merchandise that was found to be adulterated or harmful would be returned to its place of origin, unless its proprietor filed an appeal within eight days. Appeals were sent immediately to the Imperial College of Medicine in Istanbul, and a second analysis would be conducted there within fifteen days. This process was intended to allay the Europeans' concerns about undue delay and a lack of transparency in the customs inspection process.

The customs regulation of 1900 also specified the classes of drugs that could lawfully be imported into the empire. Medications which did not conform to the French Codex or which were comprised of secret ingredients were generally prohibited entry. Some medications with secret ingredients could, however, gain entry if they had been certified by an official academy in another country. The regulations also listed certain drugs that were recognized to be harmful and were thus prohibited entry.

Foods and drinks were also to be inspected under the 1900 regulation. The regulation specifically listed oils, flour (which was to contain at least 9% gluten), coffee, tea, sugar, candies, and alcoholic beverages. Customs inspectors were instructed to deny entry to any adulterated or harmful food product. The regulation also

⁴⁴See Young, *Corps de Droit Ottoman*, vol. 3, 211-212.

prohibited entry to food whose packaging contained toxic substances. A final provision specified purity standards for imported soaps.⁴⁵

These detailed regulations reflect a major shift in the Ottoman state's role in shaping society and the economy. The government intended to intervene in the marketplace with the express goal of protecting the health of its public. Adulterated foods would no longer be merely a matter for the local authorities to take care of. The centralizing state was flexing its muscles and asserting a connection between the strength of the state and the health and hygiene of its people.

The End of the Ottoman Empire

Like much of the institutional and societal reform that the Ottoman Empire underwent in the nineteenth century, medical reforms were motivated by the military desire to strengthen and defend a vulnerable society. In this respect, they were ultimately unsuccessful because they failed to preserve the empire's existence. In World War I, the Ottoman army and its civilian population suffered tremendously from disease and poor nutrition. German army surgeons and supplies were brought in to assist the Ottoman medical service, which lacked "even the most basic" supplies and resources.⁴⁶ The elaborate set of regulations and institutions established in the nineteenth century were not enough to save the empire.

Despite the ultimate demise of the empire, however, many of its medical institutions were a foundation for the Turkish nation building activities that followed World War I. The trend towards professionalization and state intervention in public health increased throughout the twentieth century. While the Ottoman Empire of the eighteenth and nineteenth centuries is perhaps conventionally considered stagnant and lumbering, it actually engaged in an energetic reform movement that was extremely receptive to European expertise in

⁴⁵Regulation on medical examination in customs, 6 Şevval 1317, 7 February 1900. Young, *Corps de Droit Ottoman*, vol. 3, 215.

⁴⁶Erik Jan Zürcher, "Between Death and Desertion: The Experience of the Ottoman Soldier in World War I," *Turcica* 28 (1996): 244-245.

science and technology, as well as to ideas about the role of the state in the lives of its people. Although the Empire set up a framework that seems very modern in retrospect, however, it probably lacked sufficient resources to enforce all its health regulations and to extend the benefit of its hospitals very far.

Part Two: Egypt

The Rise of Mehmed Ali

From 1517 until the nineteenth century, Egypt was a province of the Ottoman Empire, governed by a dynasty known as the Mamluks. Just as in other provinces, there was little state intervention in the market or in public health. Egypt was characterized by decentralization and a considerable degree of autonomy of local societies. Trade guilds played a significant role in organizing Egyptian commercial life, just as they did in other parts of the Ottoman Empire. There was little government presence in people's lives other than the *muhtasib*, or market inspector, and the chief of police (*zabit*). The *muhtasib* exercised the same traditional functions that he exercised in the rest of the Ottoman Empire: enforcing price and quality standards in the marketplace and collecting taxes on commodities and transactions.⁴⁷

Egypt was rocked by a major transformation in 1798, however, when French armies under Napoleon invaded and occupied the province for three years. The Ottoman army officer Mehmed (or Muhammad) Ali Pasha was dispatched to Egypt shortly after the French occupation as part of an Ottoman effort to reassert its sovereignty and control over the province. Mehmed Ali consolidated a power base there and received the position of governor (*vali*) of Egypt in 1805. Mehmed Ali established himself as a powerful regional ruler, almost entirely independent of the Ottoman state which continued to exercise legal sovereignty over Egypt. In fact, in 1831 Mehmed Ali revolted against the Ottoman Sultan and initiated a military campaign against the neighboring Ottoman provinces in Syria. His son Ibrahim led an army that occupied Syria for a decade,

⁴⁷LaVerne Kuhnke, *Lives at Risk: Public Health in Nineteenth-Century Egypt* (Berkeley: University of California Press, 1990), 19.

until the Ottoman Sultan, with British support, forced the Egyptian army to return to Egypt. By the time of his death in 1848, Mehmed Ali had secured the governorship of Egypt as a hereditary dynasty for his family, with only the most nominal of connections to the Ottoman Empire.

Mehmed Ali undertook an extensive centralizing reform program that transformed Egyptian society and its economy. In particular, he used irrigation techniques to transform cotton cultivation into a cash crop that dominated the Egyptian economy and linked Egypt commercially to Europe. By creating government monopolies, Mehmed Ali was able to reap the financial benefit of this explosion in the Egyptian economy. He used this wealth to establish a modern conscription-based army and a host of economic, social, and scientific institutions that were used to support it.⁴⁸ Mehmed Ali's centralizing state imposed burdens of taxation and conscription on an Egyptian rural population that had been theretofore relatively autonomous.

The Creation of the Egyptian School of Medicine

Until the nineteenth century, Egyptian medicine was primarily in the domain of barber-surgeons who performed a wide array of procedures, including "circumcision, phlebotomy, scarification and cupping, teeth extraction, opening abscesses, and bandaging or applying leeches to wounds and contusions."⁴⁹ There were charitable hospitals in Egypt, run by religious foundations in the Islamic tradition, dating back to medieval times, but these hospitals had suffered major deterioration by the eighteenth century.⁵⁰ As Mehmed Ali began conscripting peasant men from Egypt and the Sudan in the 1820s, however, the need for more comprehensive medical treatment became clear. These conscripts suffered from a variety of ailments and had high mortality rates. When these men had been mere peasants, the governors of Egypt paid little or no

⁴⁸Khaled Fahmy, *All the Pasha's men: Mehmed Ali, his army and the making of modern Egypt* (Cambridge: Cambridge University Press, 1997) 9-11.

⁴⁹Kuhnke, 27.

⁵⁰Amira el Azhary Sonbol, *The Creation of a Medical Profession in Egypt, 1800-1922* (Syracuse: Syracuse University Press, 1991), 6.

attention to their medical condition, but they were now needed as manpower for a new army. Furthermore, the health situation worsened once these men were forced to live in close quarters as part of an army, which, at its peak, had 180,000 soldiers. Outbreaks of plague and cholera were common, and syphilis and smallpox posed another significant threat to the effectiveness of armed forces.⁵¹ To deal with the crisis, Mehmed Ali created a military medical corps consisting of British, French, German, Italian, and Spanish physicians and surgeons.⁵²

The most prominent of these European medical advisors was the French physician Antoine Barthélemy Clot, who later earned the Ottoman title of Bey for his lengthy and loyal service to Mehmed Ali. Clot Bey was the founding director of the Egyptian School of Medicine in 1827. The school was affiliated with a new military hospital that included a lecture hall and a pharmacy. The school's curriculum, which provided training in anatomy, pathology, physiology, surgery, internal medicine, hygiene, toxicology, and forensic medicine, was designed to create a new class of Egyptian physicians who would meet the needs of the military. Perhaps the clearest indication that military exigencies led to the creation of the medical school was that the school itself was under the supervision of Mehmed Ali's Department of War.⁵³

The establishment of a Veterinary School in 1827 and a Pharmacy School in 1829 complemented the activities of the new School of Medicine. The emergence of pharmacy as a distinct science brought with it a professional identity and privilege similar to that which arose in the Ottoman Empire. The Egyptian market for medicines was at the time dominated by herbalists who sold a variety of more or less unregulated herbal medicinal products. Home remedies were also a popular form of treatment. Gradually, over the course of the nineteenth century, modern pharmacists replaced herbalists as the primary purveyors of medicines.⁵⁴

Clot Bey also proposed that a Health Council be formed to supervise and coordinate health efforts in Egypt.

⁵¹Khaled Fahmy, "Women, Medicine, and Power in Nineteenth-Century Egypt," in *Remaking Women: Feminism and Modernity in the Middle East*, edited by Lila Abu-Lughod (Princeton: Princeton University Press, 1998), 41.

⁵²Kuhnke, *Lives at Risk*, 31.

⁵³Kuhnke, *Lives at Risk*, 34-38.

⁵⁴Sonbol, *The Creation of a Medical Profession in Egypt*, 80.

The Health Council consisted primarily of foreign consuls in Egypt, and it made recommendations for and coordinated health services. Clot Bey himself was a member of the Health Council, which attempted to keep records of doctors, pharmacists, midwives, and barbers practicing in Egypt. The Health Council was involved in the licensing of medical practitioners and supervising the regulation of the medical practice, including the administration of examinations for medical students.⁵⁵ The early and significant involvement of foreign consuls in Egypt's public health sector highlights the importance of public health to Europeans who were engaged in commercial activities in Egypt.

Beyond the activities of Clot Bey himself, European influence on Egypt's medical sector was apparent both in the great number of European physicians who taught in Egypt's School of Medicine and in the number of Egyptian physicians and medical schools who received training in Europe. There were a number of Egyptian medical student missions to Europe in the nineteenth century. In Mehmed Ali's time, most of these missions were sent to France, which was thought to have the most advanced medical science in the first half of the nineteenth century. Later Egyptian rulers turned more to Germany and other European countries.⁵⁶

Despite the ambitious plans for the health sector, Egypt's military hospitals perennially suffered from a lack of adequate funding. During the Syrian campaign in the 1830s, Mehmed Ali set up several army field hospitals in Syria. These military field hospitals, as well as the main military hospital and the School of Medicine in Cairo, were often in a poor and unhygienic condition. Clot Bey set up stringent regulations for the quality of food for patients, but official documentation shows that complaints about the poor (at times even unsanitary) quality of food at the Cairo military hospital were widespread and lasted for decades. Hospital administrators and doctors regularly wrote the Department of War to request extra funds for supplies ranging from new uniforms to better surgical bandages. Reports from the field hospitals in Syria complained that they were unsanitary and malodorous, understaffed and overcrowded. There is thus considerable evi-

⁵⁵Sonbol, *The Creation of a Medical Profession in Egypt*, 32, 89.

⁵⁶Sonbol, *The Creation of a Medical Profession in Egypt*, 73-74.

dence that Mehmed Ali's hospitals did not live up to the standards he set for them on paper.⁵⁷

Mehmed Ali nonetheless considered his new health institutions a centerpiece of his reform program. He was a master of public relations who used these health institutions as a way to promote his image as a modernist. Efforts were constantly made to spruce up the hospital and medical school, at least superficially, so that they could be exhibited to the frequent European travelers in Egypt. This attempt to project a successful image for European eyes seems to have been successful. Despite much documentary evidence of complaints about the hospital and problems with supply shortages, European travelers of the period almost always praised Mehmed Ali's health institutions.⁵⁸

The adoption of new medical and educational practices was by no means seamless. Postmortem dissection of human cadavers, for example, was an integral part of Clot Bey's medical pedagogy and the study of anatomy, and its introduction into the curriculum sparked considerable controversy. Clot Bey initially felt compelled to conduct anatomy lessons in secret because of fierce opposition to the practice. One medical student's outrage went so far that he attacked Clot Bey with a knife as he performed an autopsy in class in 1829. Egyptians' opposition to dissections and autopsies was said to stem from a Pharaonic belief that individual sensation persisted after death as well as from Muslim belief in resurrection of the body for the day of judgment.⁵⁹ In this context, however, it is useful to note that suspicion of new and foreign medical practices was not limited to Egypt or to the Islamic world. Western medicine was contested in other parts of the world as well. Postmortem dissection of human cadavers, for example, was similarly controversial in eighteenth-century Japan, where anatomy lessons were also conducted in secret.⁶⁰ Likewise in nineteenth-century British India, the local population deeply resented autopsies and other forms of interference with

⁵⁷Fahmy, *All the Pasha's men*, 218-221.

⁵⁸Fahmy, "Women, Medicine, and Power in Nineteenth-Century Egypt," 39.

⁵⁹Kuhnke, *Lives at Risk*, 36; Sonbol, *The Creation of a Medical Profession in Egypt*, 64.

⁶⁰Sugita Gempaku, "A Dutch Anatomy Lesson in Japan," in *Worlds of History: A Comparative Reader*, vol. 2, edited by Kevin Reilly (Boston: Bedford/St. Martins, 2000): 152-154.

indigenous funereal practices.⁶¹

Cholera, Plague, and the Quarantine

Egypt, like the rest of the Ottoman Empire, was afflicted by cholera throughout the nineteenth century. The cholera epidemic that hit Istanbul in 1831 also dealt a severe blow to Cairo. Muslim pilgrims from Egypt and the Levant contracted cholera during their travels to Mecca, where they shared close quarters with pilgrims from other parts of the world, including India, where cholera was endemic. The 1831 cholera epidemic, the first of its kind in the Middle East, ultimately killed 150,000 people in Egypt. The Egyptian government attempted to institute controls and quarantines, but they were inadequate and ineffective. Many of the European medical officers living in Egypt fled the country in fear and frustration, but Clot Bey remained on to serve the Pasha. It was then that he earned the title Bey.⁶²

One significant response to the cholera crisis was Mehmed Ali's 1841 enactment of a Sanitary Code in Alexandria that was to serve as a model for future sanitary codes in other cities in Egypt, including Cairo. Alexandria was Egypt's most important port city, and epidemics threatened Egypt's lucrative commerce with its European trading partners, so it was a natural place to experiment with public health reform. The Sanitary Code was meant to deal comprehensively with public health and hygiene matters, including street cleaning, waste disposal, ventilation of bazaars, and food inspection. The code assigned food inspection duties to former military medical officers who, together with the *muhtasib*, would "examine all comestibles and the food prepared by public cooks, and deliver any suspect commodities, together with their vendor, to the police."⁶³

Despite this ambitious program (whose very comprehensiveness may have made enforcement difficult), Egypt

⁶¹David Arnold, "Touching the Body: Perspectives on the Indian Plague, 1896-2000," in *Selected Subaltern Studies*, edited by Ranajit Guha and Gayatri Chakravorty Spivak (New York: Oxford University Press, 1988): 402-403.

⁶²Kuhnke, *Lives at Risk*, 49-56.

⁶³Kuhnke, *Lives at Risk*, 58-59.

still suffered immensely during the next cholera epidemic in 1848. A third cholera epidemic in 1865 was also difficult for the Egyptian authorities to contain. By then, the use of railway and steamship transport for pilgrims caused the disease to spread even faster. The authorities continued to rely on the quarantine to control the spread of cholera, but the local population often resisted the restrictions it imposed on their freedom of movement. The quarantine generally involved the use of soldiers to cordon off an affected community, police public places, seize any foods that were suspect, and whitewash or even destroy homes.⁶⁴

The quarantine was even less effective in confronting outbreaks of plague that struck Egypt in the mid-nineteenth century. Plague was an old disease that had affected Egypt and the rest of the Middle East for centuries, and in the nineteenth century, at least, it did not instill in Egyptians the kind of fear that cholera did. Europeans who lived and did business in Egypt, however, were afraid of plague, and they used their influence on Alexandria's quarantine board to institute new regulations to control the spread of plague. The nude corpses of the recently dead were to be examined by medical experts for signs of plague, and families of the deceased victims of plague were to be quarantined. Locals resented these regulations and attempted to undermine them by refusing to report illnesses within their families and by burying their dead secretly.⁶⁵ The conflicting interests of Europeans living and doing business in Egypt posed another challenge for Egyptians who hoped that quarantines would bring diseases like cholera and plague under control. Europeans who lived in Egypt feared diseases like cholera and plague, and they often fled or kept to their homes during times of contagion. European merchants and the consuls who represented them were also, however, eager not to take measures that would unduly burden commercial interests. The Egyptian government, whose international trade policy was to promote its cash crops, especially cotton, likewise did not want to jeopardize its financial stability. The tensions inherent in all these conflicting interests led to ostensibly ambitious and yet generally unsuccessful disease control measures.

⁶⁴Kuhnke, *Lives at Risk*, 65-67.

⁶⁵Kuhnke, *Lives at Risk*, 80-81.

After the 1865 cholera epidemic, Egypt participated in the 1866 International Health Congress in Istanbul and coordinated its disease control procedures with those of the Ottoman Empire. The conference focused on quarantines and on sanitary measures to be taken on pilgrimage ships. Towards the end of the century, British companies like the Suez Canal Company grew frustrated with strict quarantines that hampered commerce. Restrictions had been extended beyond pilgrimage ships and were by 1881 also imposed on commercial and passenger ships from the British colonies of India and Aden. The quarantine was increasingly politicized, as Britain suspected that its European competitors were influencing Egypt's quarantine policy in order to damage British commerce.⁶⁶

Smallpox Vaccinations

Smallpox was a major problem in Egypt, as it was in other regions of the world, before the discovery of Jenner's vaccine in 1796 and the comprehensive vaccination programs that followed it. In the 1820s, Clot Bey reported that smallpox was ravaging the country and drastically increasing infant mortality rates.⁶⁷ Egypt, however, was ahead of the Ottoman Empire in its smallpox vaccination efforts. We saw that the Ottoman Empire made almost no effort to implement large-scale vaccination of its population until at least the 1840s, and even then, efforts were restricted to Istanbul. Mehmed Ali, on the other hand, was actually a pioneer in conquering smallpox, and the Egyptian countryside was an important target of his eradication program.

Vaccinating the rural population, however, was a constant source of controversy and challenge for the Egyptian authorities. As early as 1819 Mehmed Ali ordered the vaccination of children throughout the country in the hopes that this compulsory program would convince reluctant peasants who believed that the vaccina-

⁶⁶Kuhnke, *Lives at Risk*, 102-109.

⁶⁷Fahmy, *All the Pasha's men*, 210.

tion of children was “contrary to their customs.” Peasants were not wholly irrational in their opposition to vaccination, however. In 1821, the Egyptian army systematically inoculated conscripts from the Sudan, and the rural populations began to believe that vaccination was a way for the government to “mark” recruits for military service.⁶⁸ It would require considerable time and struggle for Mehmed Ali to dispel this association in the minds of the Egyptian populace.

In 1824 Mehmed Ali commissioned a corps of French physicians to travel to the countryside to implement a smallpox eradication program. These physicians were to vaccinate children, but their more important goal was to teach local barber-surgeons how to do the vaccinations themselves. The mission ended with failure, however, when parents began to complain that many inoculated children actually ended up contracting smallpox, and that some died. Interestingly, the complaints did lead to a government investigation, although it is not clear whether anyone was ultimately held responsible for the incident. Not eager to throw in the towel, Mehmed Ali initiated another French mission to the countryside in 1826.⁶⁹

Clot Bey’s strategy for smallpox eradication went beyond repeated missions to the countryside where the peasants would be forcibly vaccinated. He conceived of a more systematic, comprehensive strategy. He thought that the army medical corps could make great strides in eliminating smallpox by ensuring the vaccination of easily accessible populations. Clot Bey’s program targeted students in government schools, soldiers, soldiers’ families who lived in or near army camps, and government laborers who worked on the ships of the Egyptian navy or in government arsenals and factories. Village barbers would be brought in to the capital to receive training, and incentive programs were developed to award monetary prizes to barbers who completed their training successfully.⁷⁰

⁶⁸Kuhnke, *Lives at Risk*, 113-114.

⁶⁹Kuhnke, *Lives at Risk*, 114.

⁷⁰Kuhnke, *Lives at Risk*, 114.

Clot Bey also supervised the 1836 establishment of a central administration to coordinate and control smallpox immunization. A vaccination station was set up at Cairo's main hospital, and women health officers were trained to work there. A public clinic was open twice a week for the purpose of vaccinating children. In 1842, a provincial health administration was set up to extend this program beyond Cairo and into the countryside. Police instructed the population only to seek treatment at authorized vaccination stations.⁷¹

Despite all these efforts, peasants generally remained suspicious of Mehmed Ali's vaccination program. They continued to associate vaccination with being "marked" for conscription and indeed began referring to it as "tattooing smallpox." Gradually, however, resistance began to wane. When the Egyptian army was forced out of Syria in 1841, Mehmed Ali's need for conscripts declined dramatically, so the threat that he posed to the peasants was attenuated. Moreover, as time went by, peasants were able to observe that the smallpox vaccine really was effective, so their resistance to the program ebbed. The system set up by Clot Bey and Mehmed Ali was ultimately successful, and village barbers continued to be the primary administrators of smallpox vaccination in Egypt into the twentieth century.⁷²

The pattern of popular resistance and ultimate acceptance demonstrated by Egypt's smallpox vaccination efforts was not an unusual one. In nineteenth-century India, the British undertook a similar vaccination project, which was met with popular resistance and suspicion. Just as Clot Bey relied on traditional barbers to administer vaccines, the British recruited native practitioners called *tikadars* to conduct mass vaccinations. Resistance persisted as vaccinations became compulsory, and rumors regarding the motives of the British were rife. Some Hindus were disgusted with the idea that the vaccine was derived from cows. Other Indians were suspicious because vaccinations were only compulsory for Indians and not for British citizens. The controversy over vaccinations became only part of the larger debate over British rejection and undermining

⁷¹Kuhnke, *Lives at Risk*, 115-116.

⁷²Kuhnke, *Lives at Risk*, 117-120.

of traditional indigenous medical practices. Eventually, however, after a considerable period of resistance and turmoil, the vaccine was accepted.⁷³ Of course, Mehmed Ali was not a colonizer in the same sense that the British in India were, but his centralization program and his projection of state control over the relatively autonomous countryside bore similarities to colonial rule.

School for Midwives

Another important innovation that Mehmed Ali introduced initially to improve the health of his soldiers was the opening of a School for Midwives in 1832. On its face, this innovation may not seem closely linked with the military, but in fact the midwives' duties extended far beyond obstetrics, and training women health officers was an integral component of Clot Bey's health reforms. It was thought that graduates of the new school would help to stem the spread of debilitating diseases like smallpox and syphilis. Smallpox and syphilis were ailments that afflicted the Egyptian population and hampered Mehmed Ali's efforts to create a modern, healthy armed force.

The slow progress that Egyptian authorities made in vaccinating the rural population for smallpox led them to consider ways to overcome the peasant's resistance. One thought was that the village barber-surgeons who were being trained to administer vaccines were ineffective because they did not allay the fears of women who did not want their children to be immunized. Clot Bey thought that women health officers would be better able to treat women and children who were not being reached by the existing system. These women health officers would be trained at the School for Midwives, which was thus seen as one element of the broader campaign to eradicate smallpox and build a healthier populace (and thus a healthier army).⁷⁴

Just as Goltz Pasha would discover later among the Ottoman armed forces, Clot Bey was horrified at the

⁷³Deepak Kumar, "Unequal contenders, uneven ground: medical encounters in British India, 1820-1920," in *Western medicine as contested knowledge*, edited by Andrew Cunningham and Bridie Andrews (Manchester: Manchester University Press, 1997): 176, 184-185.

⁷⁴Fahmy, "Women, Medicine, and Power in Nineteenth-Century Egypt," 42.

prevalence of syphilis among Mehmed Ali's troops. During the Syrian campaign, syphilis reached near-epidemic proportions as the new conscription policy had caused serious disruptions to family life and a rise in prostitution. Syphilis was also prevalent among the student population at the military schools in Cairo. The presumed linkage to prostitution led Clot Bey to believe that the training of women health officers who would examine prostitutes regularly would solve the crisis. The School for Midwives was thus conceived of as a response to a military problem.⁷⁵

The School for Midwives, which, like the School of Medicine, was under the administration of the Department of War, was based on a French model and required six years of training for graduates who would be designated *hakimas* (woman doctors), as distinct from *dayas* (traditional midwives). Graduates of the School for Midwives received diplomas that enabled them to administer vaccinations, perform obstetrics, and treat women and children in public clinics for a variety of ailments, including eye diseases, scabies, syphilis, and broken limbs. *Hakimas* would also perform autopsies on female corpses. It was intended that graduates would enter government service, either as instructors at the school or as practitioners in a Cairo's civil hospital.⁷⁶

The School for Midwives does not seem to have achieved the success that Clot Bey hoped it would. Initially, the school encountered tremendous difficulty recruiting students, perhaps because the population saw a similarity between the way the government conducted recruiting with conscription. Families seem to have been reluctant to send their daughters to the new school, and at least initially most students were captured slaves from the Sudan or orphan girls. The School for Midwives was further hampered by its complicated administrative structure. The school had to report to both the Department of War and the Department of Schools to get almost anything done. Appointing doctors, admitting patients, submitting requisitions, delivering food and medical supplies to provincial hospitals, and even paying rent for urban health clinics

⁷⁵Fahmy, "Women, Medicine, and Power in Nineteenth-Century Egypt," 44-46.

⁷⁶Kuhnke, *Lives at Risk*, 123-125.

produced a stream of paperwork and red tape.⁷⁷

Another obstacle for the *hakimas* was the reluctance of the urban and rural population to seek out their services. In fact, these populations exhibited considerable opposition to the health establishment in general. They rejected what they saw as control over their bodies through the compulsory registration of newborns, vaccination, quarantines, and autopsies. Clot Bey and others within Mehmed Ali's government were suspicious of the traditional folk practices exercised by the *dayas*, but the *dayas* continued to have a following among the people. The role that the *hakimas* played within this struggle between the state and the *dayas* may have made them somewhat suspect among the locals. When the government suspected that the *dayas* and the locals were not recording births, the *hakimas* stepped in to ensure that all births were recorded. The *hakimas* were given the power to revoke the certification of *dayas* who did not comply. In this way, the *hakimas* were perceived and rejected as a "tool of the authorities" to some extent, at least initially.⁷⁸ As the threat of conscription waned in the aftermath of Mehmed Ali's expulsion from Syria and the limitations that were imposed on his army, and as locals began to see tangible results from health measures such as smallpox vaccination, it is likely that resistance to the *hakimas* also declined.

British Occupation

Mehmed Ali's descendants ruled Egypt after his death, but the country fell increasingly under foreign financial influence. A populist movement in 1881 caused Europeans to fear that a new government would threaten their economic interests in Egypt. This concern led to British military intervention in 1882, and British occupation of Egypt lasted over 70 years. Under British occupation, the School of Medicine continued to operate, with a British doctor as director. Egypt witnessed a massive influx of foreign doctors and pharmacists due to British laws that set lenient qualifications for foreign practitioners. The School of

⁷⁷Fahmy, "Women, Medicine, and Power in Nineteenth-Century Egypt," 53

⁷⁸Fahmy, "Women, Medicine, and Power in Nineteenth-Century Egypt," 50-51, 54.

Medicine began to charge tuition, which limited its accessibility to the local population, and independent fee-based medical practices became more and more common.⁷⁹

The British also brought technological improvements and innovations to the Egyptian medical system, although these benefits did not extend to much of the population. Hospitals received better quality equipment and supplies, such as X-ray machines, electric generators, and water filters. A sanitary and professional mental institution was established, as were a number of specialty clinics.⁸⁰ The British also continued the fight against syphilis, a disease that had posed such a threat to Mehmed Ali's army, by setting up hospitals and clinics for venereal diseases, and by instituting a program of compulsory medical examinations of prostitutes.⁸¹ Foreigners and elite Egyptians dominated the medical establishment, however, and its benefits were not enjoyed by all Egyptians. Those living in the countryside, in particular, were left with inadequate health care.

Conclusion

The nineteenth century was an era of rapid change, when many parts of the globe found themselves confronted by Western commercial, political, and cultural expansion. The Ottoman Empire and Egypt sought to position themselves in this new world order by reforming their institutions and affirming their authority over their respective hinterlands. The adoption of Western technology and scientific expertise was a key component of this project of centralization and modernization, but the embrace of Western ideas about the state's role in society was also important. The modern state intervened in the lives of its people in unprecedented ways.

In this period, Ottoman Empire and Egypt established medical and pharmacy schools that set a foundation for professional identity. A new class of physicians and pharmacists whose interests were aligned with a

⁷⁹Sonbol, *The Creation of a Medical Profession in Egypt*, 111-115.

⁸⁰Sonbol, *The Creation of a Medical Profession in Egypt*, 123-124.

⁸¹Fahmy, "Women, Medicine, and Power in Nineteenth-Century Egypt," 45.

Western-style medical establishment became part of a major reform movement. In the pursuit of a healthy populace, mass vaccination programs were set up, stringent requirements for the sale of pharmaceuticals were enacted, the marketplace became the site of rigorous health inspection, and individuals were subjected to medical examinations for diseases like syphilis, plague, and cholera.

As in other parts of the world, new forms of medical knowledge and practices were not unconditionally embraced by people in the Middle East. Indigenous practices survived, and both urban and rural populations were often suspicious of the “new medicine.” Nor can this resistance be dismissed as merely superstition or stubbornness. As it happened, the spread of Western medical practices was inextricably linked with the new muscular state that nineteenth-century statesmen envisioned. Local populations were not unaware of this linkage. This point is most clearly illustrated by the case of Egypt, where medical innovations were just as integral to Mehmed Ali’s reforms as conscription, forced labor, and taxation of the peasantry were. But it also applies to the centralizing Ottoman Empire of the time, with the exception that Istanbul was not able to exert direct control over its vast periphery in the same way that Cairo could.

Ultimately, however, the modern institutions and professional identities, not the resistance, are the lasting legacy of nineteenth-century public health reform in the Middle East. The medical schools, hospitals, pharmacies, sanitation systems, and inspection regimes that were established then bear a close resemblance to the public health institutions that are familiar to us today. The medical reforms undertaken in the Middle East in the nineteenth century were in fact quite advanced, but a persistent lack of resources often prevented the promise of the reforms from being fully realized. Nonetheless, these early reforms laid the groundwork for the implementation of health care programs in the several nation-states that emerged in the Middle East in the twentieth century

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