UNIVERSITY OF CALIFORNIA

Santa Barbara

Living and Dying in Water: Fluid Infrastructure Disruptions in Urban Egypt (1870-1935)

A dissertation submitted in partial satisfaction of the

requirements for the degree Doctor of Philosophy

in History of Art and Architecture

by

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December 2022

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ACKNOWLEDGEMENTS

The completion of a dissertation is always precarious. The conclusion of this project can be generously described as non-traditional, but more accurately it is extraordinary. Gratitude, exasperation, tears, and joy accompany anything worth doing, and this journey is no exception. The generous financial, professional, and personal support of many institutions and people facilitated the research, writing, refinement, and completion of this project. To each and all I am most grateful.

First, I would like to thank my committee: Nuha, Swati, Amar, and Michael, for guiding me through this improbable journey. I have learned much from each of them and treasure their friendship and support. To Nuha especially, who has been a steadfast mentor through thick and thin. She remarked to me at just the right time that I am an imaginative thinker, which gave me a much-needed dose of courage. I could not have finished without her keen insight, perfectly-timed reminders about the role of representation in my work, and patient exhortation to be myself (and no one else). To Swati, who encouraged me to make bold claims. To make a difference is to have courage, always, even as doubt in the archive (and our understanding of it) is inevitable. To Amar, who never misses a beat, and reminds me to not shy away from what is most important – subversion and the unresolved, of course. To Michael, for a kindness and insight that speaks to the heart and likewise evades description beyond: an honor to experience. Thank you all for your patience and dedication to my work.

The University of California Santa Barbara provided the opportunity to study and research without a work requirement through a generous Dean's Central Fellowship. The History of Art and Architecture Department supported my coursework and research with a Mallory Fellowship. The Department also allotted me generous funds to travel and perform archival research. The Center for Middle East Studies supplemented this fund, with which I was able to spend a lengthy stay in Egypt and the UK, performing fieldwork and digging into archives. In Alexandria I am very grateful to the kind, knowledgeable, and attentive staff at the Centre des Études Alexandrines and the Bibliotheca Alexandrina. Both were extremely helpful with many a puzzling query onsite and later online via email. In London, the staff at the British Library India Office helped me cull through photograph collections, the staff at the National Archives pulled dozens of maps and plans. I am thankful for the friendship and support of friends in Alexandria and Cairo: Kate, Hussam and Maiy especially. I thank Samar and Shaimaa for their help remotely, with documents and a tricky transcription, respectively. Three FLAS fellowships from UW Madison and a US Department of State CLS supported intense Arabic study, which was essential to this project. I am very grateful to faculty and mentors at UCSB and elsewhere for helping me at various stages to hone my curiosity, critical thinking, and for merely sharing very useful advice. Thank you, especially Dwight, Manu, Arijit, Shiva, and Jerry.

We finish such projects because of the people we meet along the way. The ones who encourage and exhort us at the appropriate times, the ones who know when to talk and when to listen. To my friends at UCSB, I am forever grateful. To Suzanne and Ashleigh – the three of us will always be the dream team. Samira and Maggie M. – thanks for being with me at the finish line. Sophia, Erin, Maggie B., Diva, Mallorie, Shannon, Aleesa, Deb, Mira, Joe, Ted, Seth, Rohan, Rachel, Tom, and all the rest of my colleagues and friends in HAA and CMES – thank you for your friendship. It is really all that I needed.

This dissertation is dedicated to my family. My parents Merritt and Jeanney always encouraged me to think, to question, and to pursue difficult things. My sisters, Shamah, Ari and Carmen helped me build my confidence and taught me how to argue well. To my in-laws, Sharon and Bob, thank you for your steady encouragement. To my husband, Jason, thanks for pushing me to finish. For Deirdre and Arthur, thank you for being the reason I knew that I could.

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ABSTRACT

Living and Dying in Water: Fluid Infrastructure Disruptions in Urban Egypt (1870-1935)

by

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This dissertation is a spatial and urban study arguing that the history of modern urban Egyptian water infrastructure is manual, laborious, incomplete, and mediated through a series of visual and textual representations. Modern infrastructure, including dams, barrages, underground pipes, and taps, has generally been characterized as the exclusive realm of experts. However, the focus of this dissertation is the frequent, sustained, and provocative disruptions performed by the general populace that invariably accompanied and thus constituted large and small water infrastructure projects. In four thematic chapters divided into two parts, my dissertation examines a set of related disruptions that have left distinct patterns in the archive. My evidence includes photographs, maps, plans, fieldwork in Cairo and Alexandria, court documents, Arabic-language newspapers and periodicals, and government reports. My method brings forward the substantial visual archive that has been largely unconsidered in modern water infrastructure studies in order to reconsider inherited narratives about the classification of free water as dirty water, water infrastructure modernization as a positivist process, and infrastructure itself as the realm of metal and concrete.

The first two chapters of this dissertation focus on thematic disruptions of living in water in urban Egypt. Chapter one examines the history of water carrying mediated through a series of photographs and maps. The water carrier and the tap form an imperative logistical and discursive axis that highlight the spatial implications of uneven water access. Chapter two analyzes the history of Cairo's ancient canal, the Khalig al-Masri, closed around 1898. My research has shown that the largely unchallenged justification of closing the canal to protect public health is not supported by the evidence. Indeed, there was substantial public disapproval of the closure of Cairo's primary ceremonial, social and potable water source.

The second part addresses disruptions brought forward by dying in water. Chapter three addresses cholera epidemics from the perspective of frequent acts of resistance. This spatial history of cholera challenges public health experts' claims that resistance was driven by ignorance. Rather, people understood the far-reaching implications of home invasion and the forced removal of sick family members. Chapter four explores a complex set of fluid and spatial relationships suggested by an 1883 drowning inquest file. This accidental drowning of a British soldier at Alexandria underscores the complex relationship of public propriety and social water spaces, and the concurrent dramatic foreclosure of open water sources that facilitated the expansion of urban Alexandria.

NOTE ON TRANSLITERATION AND TRANSLATION

I have used a simplified version of *IJMES*'s transliteration system in this dissertation. Diacritics to distinguish sounds represented by the same letter in English been removed, so "h" stands for both ح and ه. Hamza (') and ayn (') are indicated as per IJMES's system, except initial hamza and ayn have been removed for ease of reading, so umdah instead of 'umdah. The expert will recognize where they are absent. On rare occasions, I have retained the Arabic text instead of using a transliteration. In most cases, I have used the commonly accepted English translation of place names and names of historical figures, such as "Ramleh" instead of al-Raml, and Youssef Chahine instead of Yusuf Shahin. I have usually omitted honorific titles in the text such as bey and pasha, unless the title helps to clarify a particular individual. I have retained original spellings in quotations, which may not align with this system. Minor variations may occur in the bibliography or footnotes depending upon what system other authors employed. Unless otherwise noted, all translations are my own.

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From the 1870s through the 1930s, water carriers appear in hundreds if not thousands of photographs from urban Egypt. They pull water from the banks of the Nile or a canal, they wait in line at public water taps, and they walk in the streets (see for example, figs: 1.4-1.7).[1] There is little scholarship at all on manual water carrying and none that I could uncover on these images. Why was water carrying seemingly so common in modern urban Egypt well into the twentieth century? What was their role in the water infrastructure system, and what did that system, its governance and logistics look like? Why are water carriers and water carrying virtually absent from the history of Egyptian infrastructure, modern or otherwise? This profound archival disconnect is emblematic of all four case studies that comprise this dissertation: people, labor, and acts of resistance constitute infrastructure. But that fact has been systematically occluded in the archive, leaving marks and traces visible only in pattern.

To uncover this history, these traces must be read against the archival grain. For example, the ubiquitous photographs of water carriers exist because of orientalist stereotypes that photographers captured, consumers valued, and the market perpetuated. Water carrying appeared antimodern in this context, as the antithesis of modern urban water

[1] I have performed a diligent if not comprehensive review of major photograph collections for this project. Many of these are at least partially digitized. Some of the more substantial collections include: The Victoria & Albert Museum, The Keystone-Mast Collection at UC Riverside, The Bibliothèque nationale, and the New York Public Library. Water carriers from other countries, such as Peru, India and Italy are also frequently depicted.

infrastructure.[2] But rather than consider these figures and their representations as only remnants of imperial and orientalist discourse, I offer an alternative. Instead, the persistent visual and spatial trace of water carrying is an important disruption to a circumscribed technocrat-driven history of modern water. Moreover, water carrying was routine, mundane, critical, and fundamentally corporeal. The water carrier reminds us that one cannot discuss water infrastructure without considering bodies, and one cannot consider bodies without inviting resistance. Water carrying inevitably leads to other related and equally profound disruptions.

This dissertation will show that water carrying in its myriad forms is as much a part of the history of modern water, water infrastructure, and water access in urban Egypt as the technology that enabled water control, such as canals, dams, locks, reservoirs, barrages, pumping stations, miles of underground pipes, taps, indoor plumbing, sewers, and storm drains. Water carrying continued alongside the development of chemical and microscopic analysis, filtering technology, wastewater treatment and sewage farming. Water carriers labored and provided water for the experts and institutions that wrote and approved the budgets for concrete and steel structures to be built and maintained, such as municipal governments, water and waste removal companies, trade schools, education ministries, and public works departments. Water carrying, no matter who performed the labor, suffuses the history of modern water in urban Egypt. Once this fundamental condition is recognized, a technocratic and engineer's history of water becomes shallow.

[2] I discuss the stakes of orientalist photography in greater depth in chapter one. I take my understanding of orientalism as a rhetorical and epistemic concept from Edward Said's work. See: Edward Said, *Orientalism* (New York: Vintage Books, 1979).

Adding ordinary people such as the water carrier back into the history of water infrastructure modernization reframes water as a cultural and social practice. While much excellent and groundbreaking research has focused on the political and technocratic history of Egypt's water, the culture of water, especially its spatial implications, remains understudied. I suggest that the separation of water as resource from its cultural practice is a historically-implicated construction. This rifting of water reached its peak in Egypt during British intervention and colonization (1883-1956). This fundamental disturbance caused successive and sustained ripples of dissent that are visible in the archive as a series of disruptions. This dissertation first brings attention to the process of cleaving the cultural significance of Egypt's water, especially the Nile, from its economic (political) potential. Second, it investigates and pulls together the patterns of these visible disruptions to form alternate interlocking narratives of the history of modern water infrastructure as an urban spatial practice. Of course, there was no single Egyptian history or Egyptian mode of water practice. The wealthy and members of the intellectual elite experienced water infrastructure change differently than the urban poor or migrants. In general, archival sources of this time, whether court documents, newspapers, or photographs, represent the prerogatives of the elite. But these sources can also reveal other aspects of urbanity, whether intended or otherwise.

I have arranged my dissertation in two parts to emphasize thematic links in four related disruptions. Part one focuses on disruptions to isolating and controlling potable water access, or living in water. My first chapter examines the relationship of water infrastructure modernization to manual water carrying, and how metal pipes and taps relied on water laborers to fill persistent gaps in water access. This ran contrary to the official rhetoric,

which indicated the disappearance of water carriers as necessary for water infrastructure to be modern. The uneven sporadic distribution of public taps in cities such as Cairo exacerbated issues of limited access, inciting resistance in various ways. In my second chapter, I consider the circa 1898 closing of the Khalig al-Masri at Cairo, the city's main canal. It has been largely assumed that closing the canal was in the interests of public health. Yet the archive suggests corporate water and transportation interests played a pivotal role in completing the project. These were separated from and chosen over the ceremonial importance of the waterway.

Part two of my dissertation examines disruptions brought forward by death in water. Chapter three examines water's connection to cholera, and how this entanglement extended into the private space of the home. People resisted attempts by colonial sanitation officials to control water and invade homes to seize ill family members. Official claims that people did so out of ignorance are not supported by the evidence. My final chapter considers drowning deaths and public drunkenness, and the slow but steady colonial process of social water control. Working from a particular drowning inquest from 1883, I parse the complex entanglements of social propriety, water sociability, and the steady disappearance of water spaces in the city of Alexandria.

Separating living and dying in water is a structural choice to amplify patterns, rather than indicative of a strict demarcation of these states. Indeed, life and death are present in each disruption. The thematic organization of these chapters means that many people, institutions, and events will make repeated appearances. This is necessary, and a poignant reminder of the complex saturation of a history of fluid disruptions of urban water. One act(or) or set of decisions had multiple, varied, and sometimes unforeseen associations.

Fundamentally this is an interdisciplinary architectural and urban history. I work with an array of sources including fieldwork in buildings and water structures, urban spaces such as streets, alleys, and the shores of the Mediterranean, court documents, periodicals, newspapers, photographs, maps, and plans. I bring particular focus to Egyptian textual non-governmental sources in Arabic, French and English, such as daily newspapers and memoirs. The substantial visual archive I incorporate has been considered far less than textual sources in scholarship on water. These sources complicate the circumscribed rhetoric of texts, showing a narrative of water infrastructure modernization comprised of people disobeying. This disobedience created disruptions in the archive; patterns that I build into spatial histories. As a group these sources highlighted simple questions about water infrastructure and its relationship to people that have yet to be sufficiently addressed. Such as: how did water flow in the city? Where did it go and how did it get there? In what ways was it used, and by whom? What structures, people and entities actually constituted modern water infrastructure, and in what ways? In this history, metal, concrete, and statistics must account for movement, bodies (people, animals), microbes and dirt.

Water History in Modern Egypt

The political and imperial history of the Nile is fundamental, as it has implications for the way I am framing a cultural and spatial history of urban water as a series of disruptions. Two historical figures and their contributions are important to discuss in some detail prior to moving on to the era of British colonization. The first is Muhammad Ali Pasha, the Albanian governor of Egypt, who established a dynasty that maintained control over Egypt from 1803 to 1956. Muhammad Ali was the leader of one of the Ottoman regiments sent to take back Egypt from Napoleon and the French in 1803, an effort in which

Istanbul allied with the British. Muhammad Ali is often framed as Egypt's great modernizer. This representation is repeated in many popular contemporary sources, in French, English and Arabic.[3] In terms of water infrastructure, he is credited with building canals and barrages that increased cash crop cultivation, mainly cotton.[4] This positioned Egypt to become a producer and exporter of raw goods to Europe, a short-term solution to raising revenue that had the long-term consequence of placing Egypt in a subsidiary position in the world trade economy.

However, like any new ruler, Muhammad Ali was building upon the efforts of those who came before him. He used the increase in revenue to centralize control over a vast extant sophisticated network of locally managed and maintained canals. Cash crop cultivation and the building of a modern bureaucracy required that he have greater control over these projects, not that they were otherwise neglected. Alain Mikhail has shown that in contrast to Muhammad Ali and later British modes of governance, the eighteenth-century Ottoman system allowed for local water practice and stewardship and used this knowledge to benefit agricultural practice and increase tax income.[5] Egypt, however, had been largely

[3] I will address his legacy briefly below.

[4] Muhammad Ali began state-sponsored cultivation of cash crops, especially cotton, in Egypt's countryside. His successors continued to focus on cash crop cultivation and export, at the expense of developing manufacturing and other industries. The bibliography on the role of cotton in contributing to Egypt's role as a primarily a raw exporter is vast. A thorough foundational text in English is: Roger Owen, *Cotton and the Egyptian Economy, 1820-1914: A Study in Trade and Development* (Oxford: Clarendon Press, 1969). For a recent discussion of Egypt's cotton and commercial history, see: Aaron Jakes, "Boom, Bugs, Bust: Egypt's Ecology of Interest, 1882–1914," *Antipode* 49, no. 4 (2017): 1035–59.

[5] Alan Mikhail, *Nature and Empire in Ottoman Egypt: An Environmental History*, (Cambridge: Cambridge University Press, 2011).

independent from Istanbul long before Muhammad Ali arrived, as the Mamluk aristocracy was largely in control of its lands.[6]

Other projects, such as the Mahmudiya Canal begun in 1817 that brought freshwater from the Nile to Alexandria, were also renewals. In this case, according to al-Jabarti, the effort was staggeringly expensive, and its implementation was so poorly managed that it cost thousands of lives, mostly unnamed peasants conscripted from the countryside. Al-Jabarti was an outspoken critic of the viceroy and a member of the Mamluk elite who Muhammad Ali sought to destroy as part of his efforts to centralize and modernize his realm. Because of this, his book, *Aja'ib al-Athar*, was not published until 1882, decades after he and Muhammad Ali had died and three years after his grandson Ismail had been deposed by European pressure in 1879.[7] As Khaled Fahmy has shown, Muhammad Ali's legacy is complicated, and profuse praise and condemnation in a multitude of sources in and outside of Egypt attests to perhaps one undeniable achievement: his efforts established a permanent place for him in the narrative of Egyptian modernization.[8]

Muhammad Ali's grandson Ismail holds a similarly notorious position in the history of water infrastructure modernization in Egypt. Like his grandfather he was interested not only in modernizing the country with public works such as canals, dams, road, and squares, but he was also convinced of the importance of aligning his and Egypt's image with Europe.

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[6] Khaled Fahmy, *Mehmed Ali: From Ottoman Governor to Ruler of Egypt* (Oxford: Oneworld, 2009). Muhammad Ali invited the Egyptian Mamluk aristocracy to dinner and summarily murdered all of them to ensure he had not competition to centralizing Egypt's power. See al-Jabarti and Fahmy for this episode. Abd al-Rahman Jabarti, *Al-Jabarti's History of Egypt*, ed. Jane Hathaway (Princeton: Markus Wiener Publishers, 2009).

[7] Hathaway and Fahmy both discuss the timing of the publishing of al-Jabarti's book (after the British occupied Egypt) and his criticism of Muhammad Ali. See note six above.

[8] See Fahmy, *Mehmed Ali,* 112-127.

Ismail continued many of Muhammad Ali's practices in pursuit of a modern Egypt, including conscript labor, increasing peasant tax duties, and employing French experts to design and manage large projects. Both Ismail and Muhammad Ali, however, invested in the education of Egyptian men and women and the growth of modern institutions such as medical and engineering schools.[9]

Ismail oversaw the opening of the Suez Canal in 1869, a project commissioned by his predecessor, Muhammad Said. The standard history of the Suez Canal emphasizes the design, planning, and technological challenges of connecting the Red Sea and the Mediterranean as a French engineering project. As Lucy Carminati has argued, it is high time for scholarship to "people the history of the Suez Canal…for this waterway not to remain the hollow ditch it has been…"[10] The role of European money and expertise forms the basis for this characterization of "emptiness," as credit for its completion is seemingly transferable, fungible, and up for the taking. This is not the history of the canal, however. Rather it forms the substance of its vast historiographic representations. Like Muhammad Ali's Mahmudiya Canal, the Suez Canal also used conscript labor and cost many lives. People worked dredging and other machinery and labored with their bodies to support this

[9] Muhammad Ali founded a school to specifically train women as doctors. The curriculum focused on women's medicine such as obstetrics, but they were also trained in minor surgery. They were considered doctors and their training equal in rigor and content to what men were receiving. This changed under British occupation, as the British substantially curtailed education efforts, and demoted women doctors to the status of nurses, at best, who were not technically supposed to treat women outside of male supervision. For an overview, see: Hibba Abugideiri, *Gender and the Making of Modern Medicine in Colonial Egypt* (Surrey: Ashgate, 2010), especially chapter five.

[10] Lucia Carminati, "Suez: A Hollow Canal in Need of Peopling. Currents and Stoppages in the Historiography, 1859–1956," *History Compass* 19, no. 5 (2021): 1.

shipping lane, but also used the canal for fishing, to socialize and celebrate. They lived near and on its waters.[11]

Ismail and Muhammad Ali both aimed to modernize urban water infrastructure as well. Muhammad Ali began the transformation of Cairo's social water spaces by draining Azbakiya lake, a large seasonal body of water in the western part of Cairo. Muhammad Ali and his experts, such as the French physician Antoine Clot, participated in the production of a global sanitary city, which included draining seasonal lakes, widening streets, criminalizing vagrancy, and loitering, and linking physical to moral illness in policy and rhetoric.[12] Ismail further transformed Azbakiya lake into a formal garden with the aid of polymath Ali Mubarak, and landscape architect Jean-Paul Deschamps. Adam Mestyan has shown that the process of turning Azbakiya into an Egyptian version of a French public park was largely unsuccessful, as popular social practices frequently encroached upon a polite, contained European image of bourgeois respectability.[13] This is one example of scholarship

[11] These practices continue today. There are many videos on YouTube of the 2015 project, including a lavish state ceremony with a speech by Abd al-Fatah al-Sisi, the current president of Egypt, and several musical performances. One fascinating clip that deserves its own devoted study: Mohamed El-Attar, "Best 14 Minutes 'Opening of the Suez Canal's new waterway,'" (August 9, 2015), accessed April 8, 2022: https://www.youtube.com/watch?v=z5j25Fi489I. One video I found shows the landscape of the Suez, including small fishing boats alongside giant shipping freighters. Mogens Hallas, "Cruising the New Suez Canal Expansion," (March 21, 2017), accessed April 4, 2022: https://www.youtube.com/watch?v=f4-sqO6_uUE&t=118s.

[12] LaVerne Kuhnke and Mine Ener have shown how these views were intertwined and formalized in law, policy, and the management of charitable institutions. See: LaVerne Kuhnke, *Lives at Risk: Public Health in Nineteenth-Century Egypt* (Berkeley: University of California Press, 1990); Mine Ener, *Managing Egypt's Poor and the Politics of Benevolence, 1800-1952* (Princeton: Princeton University Press, 2003).

[13] Adam Mestyan, "Power and Music in Cairo: Azbakiyya," *Urban History* 40, no. 4 (2013): 681–705. Ismail identified as European, and claimed Egypt as part of Europe, but I suspect that the area around Azbakiya was considered to be the European district mostly by Europeans, tourists especially. In European-language guidebooks it is common to read such claims, but in Egyptian Arabic sources such as newspapers, histories, and literature, much

that summarily rejects a strict dual city model of Cairo that continues to pervade scholarship.[14]

The first corporate water company was founded in Cairo around 1865, an alliance that Ismail believed would align his Egypt with European countries that were building similar relationships with private utilities companies.[15] These companies were profit-driven enterprises granted significant state concessions to build modern infrastructure, such as reservoirs, pumping stations, miles of underground potable water pipes, and taps. Usually, the companies were incorporated in European countries with headquarters in Egypt, such as the Alexandria Water Company, which was technically a British corporation. This allowed companies to claim the benefits afforded European business that were not granted to local

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less so. There is a subtlety in the latter sources, and an appreciation of lived experience, that Mestyan points to, even as they do not necessary frame it in these terms. For example, in al-Muwaylihi's *A Period of Time*, the two main characters visit Azbakiya in the early twentieth century several times, but it is not called "the European quarter." People are often referred to by their nationality and class, so these were important identifiers in Cairo, but clearly not how the author understood the city or this district as an entity. See: Muhammad Muwaylihi, *What 'Isa Ibn Hisham Told Us, or, A Period of Time*, trans. Roger Allen (New York: New York University Press, 2015). Of course, even the image of European public space as tame was distant from reality. In Paris and London city officials were preoccupied at this same time with the public image problem of prostitution, vagrancy, poverty, among other things. See: Rohan McWilliam, "Man about Town: Victorian Night Life and the Haymarket Saturnalia, 1840–1880," *History* 103, no. 358 (2018): 758–76; Judith R. Walkowitz, *City of Dreadful Delight: Narratives of Sexual Danger in Late-Victorian London* (Chicago: The University of Chicago Press, 1992).

[14] An interesting discussion of the persistence of the dual city model, as well as an interesting refutation using demographic evidence in Cairo's suburbs: James Moore, "Making Cairo Modern? Innovation, Urban Form and the Development of Suburbia, c. 1880–1922," *Urban History* 41, no. 1 (2014): 81–104. Cairo was founded in the tenth century as the royal city enclave of the Fatimids who ruled Egypt from 969 to the 12th century.

[15] There are various dates for the founding of the company and when it began operation. For a few brief remarks, see: "The Water Company of Cairo/شركة المياه في القاهرة, *La Fabrique Du Caire Moderne* (March 27, 2021), accessed March 4, 2022, https://bit.ly/3CCVAt5.

companies at the time.[16] For managing the startup costs and logistics, corporations charged a fee to customers and kept most of the profits; the state also demanded a share. In Cairo, pipes and taps were first installed in the city's newer districts. These areas tended to attract wealthier inhabitants, as well as international businesses and government offices. Laying underground pipes was more challenging in older parts of the city. Additionally, private homeowners were expected to shoulder the expense of retrofitting indoor plumbing. Rather than do this, many chose to move into the newer, more fashionable areas where plumbing was already installed. This had some unintended consequences, such as the rise of informal housing characterized as slums in older areas of the city, such as Bulaq and Old Cairo, and the perpetuation of uneven access to water resources.[17]

Nevertheless, water infrastructure modernization was well underway by the time the British occupied Egypt in 1882 in response to Ahmad Urabi's popular revolution of 1881 amid fears of losing privileged access to the Suez Canal. However, the British went to

[16] The general consensus in scholarship is that the concession system had a deleterious effect on many cities in the Ottoman empire, including Istanbul. It was a short-term solution to increase foreign investment that led to indebtedness and ultimately bankruptcy in several cases. It is a highly complex historical problem that I cannot pay full attention to here. There has been recent research from the Ottoman perspective that is useful. See: Volkan Ş Ediger and John V Bowlus, "Greasing the Wheels: The Berlin-Baghdad Railway and Ottoman Oil, 1888-1907," *Middle Eastern Studies* 56, no. 2 (2020): 193–206; Neslişah Leman Başaran Lotz, "Between National Sovereignty and Foreign Capital: The Fate of the French Companies' Concessions in Turkey after the War of Liberation," *Middle Eastern Studies* 55, no. 6 (2019): 879–96.

[17] The rise of slums and whether or not they should be called slums is unresolved. The word has always had a derogatory connotation in English. It seems to have been used to characterize informal housing in Egypt as impermanent and dangerous. In contemporary Arabic sources the term is *ishish* (sing. *ishsha*). In nineteenth and twentieth century maps the word ishish accompanied by the English translation "shacks" labels parts of neighborhoods like Bulaq, a suburb of Cairo dating to about the 14th century, replacing al-Maqs as one of the city's primary ports. For one discussion of the urban planning issues affecting Bulaq today from a historical perspective, see: Gehan Selim, *Unfinished Places: The Politics of (Re)Making Cairo's Old Quarters*, (New York: Routledge, 2017).

extreme lengths to re-write the narrative of modern Egyptian water, just as Muhammad Ali had done some 80 years prior, in order to place themselves at the center of these changes. Jennifer Derr has argued that historically there are reasons that British perceptions and contributions now dominate. William Wilcock's *Egyptian Irrigation* originally published in 1889 had three editions and reached a large international public. In contrast histories from the Egyptian trained expert's perspective, such as Ali Mubarak's *Khitat* published a year prior in Arabic, was not visibly integrated into British policy or practice.[18] Local water knowledge was similarly displaced. Ignoring local expertise and local water practice had consequences. Derr's research has brought forward the unintended consequences of water engineering on communities in upper Egypt, such as the Khazan Aswan Dam completed in 1902. The dam changed the local water ecology and caused a rise in schistosomiasis, affecting perhaps upwards of 60% of Egypt's population by 1937.[19]

At around the same time as the completion of the Aswan Dam, a controversy in potable water supply in Cairo shows what happens historically and historiographically when

[18] It is important to note that Ali Mubarak served in the Public Works Department and other government ministries while working on this book. I discuss Ali Mubarak in more detail in chapter two. See: Ali Mubarak, *al-Khitat al-Tawfiqiya al-Jadida li-Misr al-Qahira wa-Muduniha wa-Biladiha al-Qadima wa-l-Shahira* (Bulaq: al-Matbaʿa al-Kubra al-Amiriya, 1886), 18, 110-111. Derr argues that it is likely that, even after acquiring some Arabic, British engineers would not have taken up Ali Mubarak's text. She describes this as emblematic of "…the gulf of knowledge that separated the author [Ali Mubarak] from the British engineers who staffed the ministry he had once headed." Jennifer Derr, *The Lived Nile: Environment, Disease, and Material Colonial Economy in Egypt* (Stanford, California: Stanford University Press, 2019), 25. I have been unable to find any statistics on the circulation of *al-Khitat,* but it is well known to specialists and widely available in research libraries. It has been fully digitized and is available on HathiTrust, as is *Egyptian Irrigation*.

[19] Jennifer Derr, "The Dammed Body: Thinking Historically about Water Security & Public Health," *Daedalus* 150, no. 4 (2021): 143–58; idem, *The Lived Nile.* Timothy Mitchell argues a similar deleterious effect for attempts to control malaria by eradicating mosquitoes with DDT. See: Timothy Mitchell, *Rule of Experts: Egypt, Techno-Politics, Modernity* (Berkeley: University of California Press, 2002).

attention is paid to disruption and resistance. Under the advice of experts and the Egyptian government, the Cairo Water Company switched all the company's intakes to subsoil water, which chemical analysis designated as "near pure." The people of Cairo revolted, claiming in numerous editorials and public complaints that the well water tasted bad, made women's hair fall out, and did not make adequate suds for cleaning clothing. As Shehab Ismail has shown, this uproar combined with the discovery that the amount of subsoil water was too limited to support the entire city caused the Public Works Department to reverse course and grudgingly accept that the people's preference for the Nile was one thing the British-controlled ministry would not be able to fully control.[20]

Ismail's analysis is important in the historiography of modern water infrastructure in that it shows how water was more than just fuel. Although he places his work within histories of science and engineering, the inclusion of culture as a significant variable in the success of policy disrupts the technocratic narrative. My contribution further promotes the culture of water as essential to understanding water infrastructure modernization in Egypt. The cultural and social importance of water reveals cracks in the political system, exploits structural weakness in engineering plans. Indeed, the term water in Arabic is capacious, unlike its English counterpart. *Ma*' and its plural *miyah* appear almost interchangeably, although the possible meanings of both are not discrete and ruled seemingly totally by context. Making water could mean urinate, and water served as a convenient euphemism for alcohol. It could be used to signify liquidity or fluidity, or even steadfastness and purity. For something to be "like water" (k-al-ma') could mean that something ran smoothly or

[20] Shehab Ismail, "Epicures and Experts: The Drinking Water Controversy in British Colonial Cairo," *Arab Studies Journal* 26, no. 2 (Fall 2018): 9–43.

perfectly. The poetic and satirical implications are endless. In my research, ma' and miyah appear most frequently as reference to bodies of physical water, but bodies of water had other names, too. *Birka* pl. *birak* referred to a pond or lake, including seasonal lakes or marshland. *Nahr* is a river, but the Nile was referred to often as the sea, or *al-bahr*. The rise of the Nile is not referred to in terms of water at all, but rather *wafa' al-Nil*, or the loyalty of the Nile, referencing the flood's slow, steady, and predictable arrival. Fountains and springs are referred to in many different ways: *ayn*, *sabil*, *yanbu'* among them. And perhaps most puzzlingly, Cairo's main canal, Khalig al-Masri or often just "al-Khalig," means gulf.[21]

These are just some of the terms that I encountered with frequency in my research, and to the Arabic philologist, and ordinary Egyptian alike will seem paltry in comparison to the endless possibilities. Water's linguistic reach signifies its spatial and social effusiveness. An endless variety left best to the initiated: the everyday user who understood intimately the stakes of living in aquatic Egypt.[22] For it is certain that the culture of water predated engineering as a modern discrete discipline and continued to exist alongside it. Intertwined

[21] Discovery for these meanings happened over the course of research, and conversations with different people. The Hans-Wehr Arabic-English Dictionary is a good place to start for varied meanings of water and water bodies. Hans Wehr and J. Milton Cowan, *A Dictionary of Modern Written Arabic: (Arabic-English)* (Urbana, IL: Spoken Language Services, 1994). I appreciate the input at various times about this terminology from: Nuha Khoury, Paul Amar, Michael Provence, Kate Rankin, and Dwight Reynolds.

[22] Water as a cultural space is largely assumed or subsumed into discussions of cosmopolitan port cities, including the Mediterranean. There remains ample opportunity to investigate the smaller spaces of water's cultural importance. Water in port city studies is an index of other modalities: as a mode of mobility, cultural exchange, and possibility. Cosmopolitanism has declined as an analytic in the past ten years, but issues of locality and nationality remain. For the gateway city as an alternative to the port city model: Onur Inal, "The Making of an Eastern Mediterranean Gateway City: Izmir in the Nineteenth Century," *Journal of Urban History* 45, no. 5 (2019): 891–907. For identity in Alexandria, see: Will Hanley, *Identifying with Nationality: Europeans, Ottomans, and Egyptians in Alexandria* (New York: Columbia University Press, 2017).

with the careful engineering of the Nile waters lies deliberate interruptions of cultural ecology. Intertwined with physical infrastructure are cultural infrastructure of bodies, and resistance.

Water as an Archive: Sources and Method

There are challenges to proposing water as the primary archive of an urban history. Water is not a stable entity. It is not solid, not preservable. The water I claim to analyze is long gone. Even the structures that held this water have been destroyed, much changed, or are inaccessible. For an architectural historian this is somewhat problematic. I must make do with the visual and textual archive that describes water structures, even as I fully admit they are highly mediated representations. Of course, this is a problem that faces anyone writing history. Events are preserved in representations. Even conserved monuments are amalgams – it must be so for them to survive.

Furthermore, how does one approach water as an archive if foundational information remains fuzzy? Unlike for the European metropoles, we still have much to research and parse out on the fundamentals of water history in modern Egypt, both urban and rural. A comprehensive history of modern urban water that delves into the vast resources of The Egyptian National Archives (Dar al-Watha'iq) would be welcome and timely in this regard.[23]

[23] In the past, international scholars and Egyptian citizens have indicated challenges with accessing the Egyptian National Archives. A complex approval process that can take months is still required at the time of writing, which contributed to my inability to access the resource during my research trip. For this issue in the 2010s, see: Mary Mourad, "Historian Fahmy argues for easing access to Egyptian National Archives," *Ahram.org* (24 June 2013), accessed April 8, 2022: https://bit.ly/3QHLgnx; Lucia Carminati, "Dead Ends in and out of the Archive: An Ethnography of Dar al Watha'iq al Qawmiyya, the Egyptian National Archive," *Rethinking History* 23, no. 1 (2019): 34–51. Anecdotal evidence suggests access has become easier as of 2022, but approval still takes months and institutional affiliation is

However, what follows is not that history. This will impact both the way this history is written, as well as the claims that it makes. For a variety of reasons including the conclusion of this dissertation during the covid pandemic, I have focused on my early fieldwork, archival work completed at the Bibliotheca Alexandrina, the Centre des Études Alexandrines, the National Archives in London, published contemporary Egyptian sources, textual and visual digitized archival material, and the readily consumable British colonial archive in the form of official reports. [24]

That being said, there is no lack of information available, and any study must circumscribe its archive. Part of my contribution is to bring forward the visual and monumental archive as it has been vastly underexplored. The visual history of Egyptian water is rich, complicated, and contradicts, in keyways, the narrative and textual history that we have inherited. For example, the textual archive makes robust claims that the water carrier was "in decline" in the 1890s. Photographs and maps from the 1930s tell a very different story.

The history of water infrastructure modernization as I am framing it is mediated by a series of representations. All sources are subject to the rhetorical frames of their moment of production, and the expectations of that mode, whether it be a court record or a photograph.[25] My method understands the limits of my visual sources, especially

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still required. As Fahmy notes, this keeps Egyptian citizens from researching their own history with ease.

[24] I hazard I am not alone in feeling anxiety about the potential incompleteness of my archive. However, over the last two years I have become acutely aware of the archival privileges I do hold – even as the coveted resource of the Egyptian National Archives was outside of reach for this project. See note 23 above.

[25] In this sense I build from work by scholars such as Ali Behdad and Zeynep Çelik, who have shown that while photography, for example, is part of an Orientalist discourse, it was also part of important local and Ottoman modes of cultural production. I will discuss this in

photographs, as both representations and as documentary evidence. Photographs are particularly valuable for architectural and urban history, but there are logistical and methodological issues to consider. First, photographs may not be preserved with much documentation. Their producer, publisher, date of production, audience, and circulation may not be known.[26] The photographs I use are an amalgam, culled for their subject rather than the circumstances of production. This means I know some of the producers, such as the Ottoman Abdullah Frères, Pascal Sébah, Gabriel Legekian, and the American Keystone View Company.[27] For others, attribution details are unknown or unrecorded. This affects my method regarding how to interpret their content.

Ali Behdad has argued that no matter the producer, early MENA photographic production and consumption was part of a global Orientalist discourse. This must be

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a bit more detail in my methods section below. Zeynep Çelik, Edhem Eldem, and Hande Eagle (eds), *Camera Ottomana: Photography and Modernity in the Ottoman Empire, 1840-1914* (Istanbul: Koç University Press, 2015); Ali Behdad, *Camera Orientalis: Reflections on Photography of the Middle East* (London; Chicago; University of Chicago Press, 2016). It is important to Behdad to maintain that MENA photographic production retains Orientalist power dynamics, even if it is produced by local studios or for Ottoman audiences.

[26] Ariella Azoulay posits this as a problem with the archive and how photographs are considered as objects that "show something" rather than as cultural objects in themselves. See: Ariella Azoulay, "Potential History: Thinking through Violence," *Critical Inquiry* 39, no. 3 (2013): 548–74. For an analysis of the archival logistics of storing and collecting MENA photography, see: Lucie Ryzova, "Mourning the Archive: Middle Eastern Photographic Heritage between Neoliberalism and Digital Reproduction," *Comparative Studies in Society and History* 56, no. 4 (2014): 1027–61.

[27] Abdullah Frères, Pascal Sebáh, and Gabriel Legekian all had offices in Istanbul and Cairo. Legekian also had an office in Alexandria for a time. All of them represented water carriers, as well as the Khalig al-Masri and other popular Egyptian urban subjects. Understanding how they represented these subjects versus European and American photographers is outside the scope of this work. For a discussion of some of these producers, see: Stephen Sheehi, *The Arab Imago: A Social History of Portrait Photography, 1860-1910* (Princeton: Princeton University Press, 2016).

recognized even when considering the documentary value of photographs.[28] My photographic evidence, whether of water carriers or the Khalig al-Masri, is understood in pattern and as both representation and documentation. The fact that there are many photographs of the Khalig al-Masri as both full and empty in 1895 is important for proving that fact that it was both full and empty of water (what may be considered a historical fact) and that there was interest in photographing both conditions. What stays the same is also important. The Khalig was crowded with houses, trees, bridges, and people, whether water was flowing through it or not. The visual archive documents water spaces elided or outright denied in the textual archive. The water carrier's assumed demise mentioned above is just one example. Maps and plans show us a complex and rich ecology of urban social water. Public fountains, baths and gardens are just a few examples of structures that served both a practical and cultural function, well into the twentieth century.

Water Infrastructure, Bodies and Resistance

Infrastructure is a series of material objects enabled (or not) by other infrastructures, structural, social, capitalist, and/or administrative. As Swati Chattopadhyay has shown, infrastructure is a spatial practice defined by people's everyday creative occupation. The key to her analysis is a profound change in orientation and perspective, one that takes the street as the primary vantage point. As a public (productive) space, infrastructure, street or otherwise, invites participation and reinterpretation. Authority figures have conceptualized infrastructure used in this manner as misuse. But on the ground and in the midst of things,

[28] Behdad's argument is in part a response to what he sees as a recent "turn" to an aesthetics of MENA photography that discounts the power dynamics in place at the time of production. See: Ali Behdad, *Camera Orientalis.* Also see: Zeynep Çelik, et al, *Camera Ottomana*.

such distinctions are not so discrete or helpful for understanding the complexity of infrastructure's physical, conceptual, regulatory, and imaginative entanglements.[29]

Infrastructure in the contemporary global context is currently being considered in terms of networks and logistics.[30] This is helpful in analyzing infrastructure's ability to connect and aid circulation (or otherwise). However, the process of building modern infrastructure also fractures, both by dismantling previous systems, as well as by changing a population's relationship to a resource. With the closing of the Khalig al-Masri, for example, many Cairenes had to drastically reorient their social and practical relationship to water. People could no longer access it freely for potable water, they had to pay for water from a tap, walk to the Nile, pay for a water carrier, or cobble together a number of other informal options. Maria Kaika and Eric Swyngedou's influential argument that infrastructure is only visible when it fails is a matter of scale and perspective. [31] Certainly, infrastructure was both hyper visible and occluded, depending on the circumstances of the viewer or user, and Maria Kaika's analysis of uneven capital flows in Greece's water infrastructure modernization accounts for this.[32] But infrastructure was likely always visible to some extent to those

[29] Swati Chattopadhyay, *Unlearning the City: Infrastructure in a New Optical Field* (Minneapolis: University of Minnesota Press, 2012). Chattopadhyay's analysis of people's use of the edges of streets and also the proliferation of wall writing are particularly relevant for my analysis. People occupied and continue to occupy infrastructure, informing its meaning beyond strict state or commercial intent.

[30] The bibliography on logistics, networks and circulation in infrastructure is growing. An excellent article that explains key current trends is: Charmaine Chua et al., "Introduction: Turbulent Circulation: Building a Critical Engagement with Logistics," *Environment and Planning. D, Society & Space* 36, no. 4 (2018): 617–29.

[31] Maria Kaika and Erik Swyngedouw, "Fetishizing the Modern City: The Phantasmagoria of Urban Technological Networks," *International Journal of Urban and Regional Research* 24, no. 1 (2000): 120–38.

[32] Maria. Kaika, *City of Flows: Modernity, Nature, and the City* (New York: Routledge, 2005), especially chapter six.

performing its labor, and to those for whom infrastructure never really functioned as such at all.

The unevenness of infrastructure makes its home for many in the body, continuously patching logistical gaps through sustained effort.[33] Deborah Cowen has shown that infrastructure is a history of bodies and labor. Railroads and pipelines in Canada indicate landscapes of colonial violence that are formed through labor to enable capitalist circulation. The exploitative nature of this labor led to organized resistance that disrupted the very process of circulation laborers brought into being. Cowen posits these communities and processes of organizing as *infrastructure, otherwise*. [34] In disruption the process is brought forward, the frailties of state claims and of the structures themselves revealed. In this vein, I see resistance as key in revealing the unevenness of the implementation of infrastructural change. It reveals the labor, the bodies, the people. This is abundantly clear in water access reforms that took place during the cholera epidemics, for example.

The convergence of infrastructure and the body magnifies the substantial error of seeing infrastructure as completed, circumscribed. Infrastructure relies on the body, on labor, to function. It requires engineers, but also laborers to clean, fix, maintain, and manage its decay. Infrastructure must be constantly remade. As AbdouMaliq Simone has shown, people are infrastructure in their ability to be flexible, adapt and create rhythm and

[33] Stephen Graham (ed), *Disrupted Cities: When Infrastructure Fails* (New York: Routledge, 2010).

[34] Deborah Cowen, "Following the Infrastructures of Empire: Notes on Cities, Settler Colonialism, and Method," *Urban Geography* 41, no. 4 (2020): 469–86.

predictability out of a seemingly endless array of possible (unregulated) scenarios.[35] Informal economies in Johannesburg, driven by people, provide the stage on which formalized economic and social life can take place. This shows how people can create order within an uneven system, even as that order is in some ways an illusion. What I also posit is that people are infrastructure *as much as* roads or pipes, enabling their functionality. People can act as social and economic infrastructure in the ways that Simone describes, but they also fundamentally *are* the pipes, roads, and power lines that enable the (seemingly uninterrupted) passage of bourgeois affairs. People's bodies enable and complete the infrastructure of the modern city that is so often taken for granted (by some) until it breaks down. My construction of human bodies as infrastructure retains the physical, the corporeal, the material, and the laborious. This is necessary especially when we consider a social and cultural space of water in which bodies are not only implicated, but active.

Bodies and water, bodies in water, and bodies using water could be a problem for the colonial state. In Egypt officials took a binary approach, defining bodies as clean or dirty. In this formulation, a clean upper class bourgeois body listened to medical authority and thus knew how to interact with water in the proper ways. This body purchased water from the tap, washed its hands frequently, kept a clean house, and understood its place in the social hierarchy. Its opposite, the dirty and unclean body, was associated with the lower classes, but also in some circumstances the people of Egypt in general.[36] Ironically perhaps, poor

[35] AbdouMaliq Simone, "People as Infrastructure: Intersecting Fragments in Johannesburg," *Public Culture* 16, no. 3 (2004): 407–29; and recently: idem, "Ritornello: 'People as Infrastructure,'" *Urban Geography* 42, no. 9 (2021): 1341–48.

[36] Khaled Fahmy, "For Cavafy, with Love and Squalor: Some Critical Notes on the History and Historiography of Modern Alexandria," in *Alexandria, Real and Imagined*, ed. Anthony Hirst and M.S. Silk (Burlington: Ashgate, 2004), 263–80; Mona Russell, "Marketing the Modern Egyptian Girl: Whitewashing Soap and Clothes from the Late

Egyptians defined as "dirty" undertook much of the labor of cleaning, providing food and water.[37] The modern Egyptian state, first under the viceroys and then under the British, was preoccupied with controlling the image and the actions of the Egyptian body.[38] But the body was unruly, it could not be easily controlled, hidden, or elided.

Focusing on the ways that people resisted water infrastructure modernization exposes its specious and uneven dimensions. As Michel Foucault defines it, resistance is always in relation to power. As such, it calls attention to power's fallacy, and to its limits – walls, rules, scolding, imprisonment, and death will never totally suffice.[39] But there is an archival problem in tracking informal modes of petty resistance. Foot-dragging, rumor, and

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Nineteenth Century to 1936," *Journal of Middle East Women's Studies* 6, no. 3 (2010): 19–57.

[37] It is interesting to think about how cleaning was part of virtually every aspect of (peasant) labor, from textile manufacturing to street modernization (water and rubbish removal). Social histories often mention cleaning as part of peasant labor. This remains so to this day in any country in the world. See: Judith Tucker, *Women in Nineteenth-Century Egypt* (Cambridge: Cambridge University Press, 1985); John T. Chalcraft, *The Striking Cabbies of Cairo and Other Stories: Crafts and Guilds in Egypt, 1863-1914* (Albany: State University of New York Press, 2004). This issue also confronts slavery and the status of Black African, Nubian and Sudanese in Cairo and Alexandria. Terence. Walz and Kenneth M. Cuno, *Race and Slavery in the Middle East: Histories of Trans-Saharan Africans in Nineteenth-Century Egypt, Sudan, and the Ottoman Mediterranean* (Cairo: American University in Cairo Press, 2010).

[38] Controlling the laboring body was part of modern governance. In agriculture, there was the corvee, over-taxation, and corporal punishment for noncompliance. Peasants resisted forced labor and the draft in various ways, including self-mutilation (self-blinding, maiming, etc). For this see: Timothy Mitchell, *Colonising Egypt* (Cambridge: Cambridge University Press, 1988); Juan Ricardo Cole, *Colonialism and Revolution in the Middle East: Social and Cultural Origins of Egypt's 'Urabi Movement* (Cairo: American University in Cairo Press, 1999). Additionally, the development of clinical and forensic medicine forged a new relationship between the state and knowledge of the body. For this, see: Khaled Fahmy, *In Quest of Justice: Islamic Law and Forensic Medicine in Modern Egypt* (Oakland: University of California Press, 2018).

[39] Michel Foucault, *The History of Sexuality*, trans. Robert Hurley (New York: Vintage Books, 1980); idem, *Discipline and Punish: The Birth of the Prison*, trans. Alan Sheridan (New York: Vintage Books, 1995).

other minor infractions are visible in pattern only. They bubble to the surface not as one curious incident, but as a set of repeated annoyances. As one British official in relation to cholera sanitation procedures so aptly warned: "Passive obstruction to sanitary measures was the rule, while the danger existed that this obstruction might at any moment develop into open opposition."[40] As Ranajit Guha and his colleagues in subaltern studies have shown, the archive is littered with, even composed of, successful episodes of resistance.[41] The subaltern form a part of this narrative, but are dispatched back into the archive without recognition as individuals, as Gayatri Spivak notes, "subaltern is a position without an identity."[42] The water carrier is a significant subaltern disruption in the archive of modern Egypt. Even as they are visible, they are constructed as types. And yet, representations of water carriers as ubiquitous and as a problem suggest their impact, and the potential power of *being* water infrastructure.

[40] "Report on the Epidemic of Cholera in Egypt during the Years 1895 & 1896," 96.

[41] Ranajit Guha, *Elementary Aspects of Peasant Insurgency in Colonial India* (Delhi: Oxford, 1983); James C. Scott, *Weapons of the Weak: Everyday Forms of Peasant Resistance* (New Haven: Yale University Press, 1985); Uday Chandra, "Rethinking Subaltern Resistance," *Journal of Contemporary Asia* 45, no. 4 (October 2, 2015): 563–73. A recent discussion of the subaltern studies genealogy and its legacy: Debjani Ganguly, "The Subaltern after Subaltern Studies: Genealogies and Transformations," *South Asia* 38, no. 1 (2015): 1–9.

[42] Gayatri Chakravorty Spivak, "Scattered Speculations on the Subaltern and the Popular," *Postcolonial Studies* 8, no. 4 (2005): 475–86. Middle East Studies historians have engaged with subaltern studies for a number of years. There are discussions about how it can/cannot be adapted to serve the geographical and historical circumstances of the region. For a somewhat recent collection, see: Stephanie Cronin, *Subalterns and Social Protest: History from below in the Middle East and North Africa* (London: Routledge, 2011). For a recent incorporation of subaltern theory into Middle East revolutionary history, see: John Chalcraft, "Egypt's 2011 Uprising, Subaltern Cultural Politics, and Revolutionary Weakness," *Social Movement Studies* 20, no. 6 (2021): 669–85.

Thus, my project is concerned with disrupting a historiography that posits the culture of water as separate from and incidental to its "functional" purpose. It also attends to people's disruptions of water infrastructure projects as both proof of this false binary, and evidence of the culture of water bringing itself forward. The case studies in each chapter described above represent pieces of a mere fraction of many possible narratives and are by no means comprehensive interpretations of each topic. Each chapter spans the length of British colonization, and in some cases before and after. Thus, as each chapter begins, we return to an earlier moment to focus on a different disruption, co-existent and intertwined with the rest. Each chapter employs a slightly different approach, necessitating a brief discussion of frame at the beginning of each. However, all my chapters work from the methodological assumptions outlined in this introduction, specifically that modern water infrastructure was a spatial practice of culture, bodies, and labor.

Chapter One. Waiting in Line at the Tap: The Labor of Uneven Water Access [43]

Introduction

In the 1952 novel *Al-Saqqa Mat* (The Water Carrier is Dead), we first meet the protagonist Shousha, a serious and morose professional water carrier (*saqqa*), at the local public tap with his son.[44] They join a line to wait for their turn for water (fig. 1.1). In contrast to Shousha, the new tap attendant is a silly man who twirls his mustaches and never moves far from his seat. Shousha observes: "He has never carried a skin in his life, nor filled a *zir*…he knows nothing of the craft of the water carrier."[45] After his turn at the tap, Shousha loads his water-filled goatskins onto his two-wheeled pushcart and begins his deliveries. He passes in and out of houses, into courtyards and alleys, and back out again. He moves with the confidence of habit, and his presence is little remarked upon. After all, the city of Cairo, even in the 1920s of *Al-Saqqa Mat*, ran on water carriers.

When water companies began to appear in Egypt at the end of the nineteenth century, new modes and nodes of water distribution emerged, gradually shifting the path of the water carrier from the Nile and its canals to public taps in the streets. Investments in pipes, pumping stations and other facilities of modern water infrastructure promised to bring water directly into every home, and seemed to herald the decline of manual water carrying. But the process was uneven, and water carrying remained an essential part of urban life well

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[43] Part of this chapter was previously published as: Alexandra Schultz, "Waiting in Line at the Tap: Stereography and Water Infrastructure in Cairo," *PLATFORM* (October 31, 2022).

[44] Yusuf al-Sibai, *al-Saqqa Mat* (Cairo: al-Khanji, 1962). The novel was made into a film in 1977. Salah Abu Sayf, *Al-Saqqa Mat/Le Porteur d'eau ... est mort* (Seattle, WA: Arab Film Distributors, 2011).

[45] Al-Sibai, *al-Saqqa Mat*, 18.

into the twentieth century. Water carrying bridged persistent water access gaps, simultaneously making visible the ordinary necessity of water labor.

Despite this, water carrying as both a profession and a necessary task remains largely unstudied. This is a considerable oversight, as the water carrier is vital to the history of water infrastructure modernization in urban Egypt. The persistence of the water carrier complicates traditional definitions of water infrastructure as (only) canals, pipes, pumping stations, fountains, and taps. The water carrier enabled all of these to function, and without them pipes and taps could not have taken hold in Cairo or any other city in Egypt. Tracing the path of the water carrier brings forward the vital role of bodies in water infrastructure modernization, and the perpetual unresolved logistics of facilitating urban water's flow.

The ubiquity of water carrying into the twentieth century brings forward critical questions about the process of water infrastructure modernization in Cairo: how did water (really) get from the Nile to the home? Who got it there, in what ways, and by which paths? What are the implications of seeing water's flow as taking place on human backs rather than (only) through metal pipes? What patterns does this flow of water reveal? I will show that the history of water infrastructure from the back of the water carrier is contingent, manual, and human. Water infrastructure in Cairo was a matter of persistent human effort and labor. Such a perspective disrupts the assumption of infrastructure as a set of manufactured metal objects assembled and placed discretely underground. Rather, water infrastructure was a series of structures and bodies converging piecemeal and provisionally in space.

The water carrier as crux in the logistics of water's flow underscores an uneven colonial modernity. The continued necessary presence of the water carrier presented a particular image problem for British colonial administrators. Water carriers in every street,

standing at every public tap, made obvious persistent gaps in the government's ability to modernize the country, undermining a critical reason for their continued presence. Indeed, photographs from the 1930s of water carriers standing in line at public taps aptly disrupt the notion of metal fixtures enabling flows, as taps become a place to wait, as much as to move.

Frame

There is little scholarship on water carriers in Egypt, most of it tangential. André Raymond's short article, "Les porteurs d'eau du Caire" (1964), is a rare exception, and is a useful summary of historical references to water carriers in Cairo compiled from Egyptian histories (*khitat*), biographical dictionaries, and *hisba* manuals.[46] Hisba manuals are guides for the *muhtasib* (marketplace inspector), who had a significant amount of unfettered power to monitor the city for, among other things, adulterated food and drink, until the mid-nineteenth century.[47] Raymond is interested in the patterns that the profession of water carrying revealed about the historical morphology of Cairo, linking these to the city's comprehensive network of public charitable fountains, and other crafts and trades such as pottery and tanning.

Water carriers form an essential if modest part of studies on Egyptian labor in the nineteenth and twentieth centuries. John Chalcraft has demonstrated the adaptability and

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[46] André Raymond, "Les Porteurs d'eau du Caire," *Bulletin de l'institut francais d'archaeologie orientale* 57 (1957): 183–202. Raymond's historical range is from the medieval to the modern period, but his focus is on Mamluk-era texts.

[47] Khaled Fahmy has analyzed how the role of the muhtasib changed in the mid nineteenth century and was replaced, at least in terms of monitoring foodstuffs, by chemists and medical professionals in the public works and public health departments. Significant changes can be dated to Muhammad Ali's public health initiatives largely spearheaded by Antoine Clot. See: Fahmy, *In Quest of Justice,* especially chapter 4. Abu Lughod notes that most duties of this position were gradually absorbed by the Cairo police. It was abolished in 1962 under the Nasser regime. Janet L. Abu-Lughod, *Cairo: 1001 Years of the City Victorious* (Princeton: Princeton University Press, 1971), 71 n. 37.

organizational capabilities of water laborers and other porters, particularly during the early and mid-twentieth century labor movements.[48] Women were also water laborers, and Judith Tucker's work has brought forth the significant role of women's work in modern Egyptian history. Women formed an essential part of city water economies as water peddlers, washerwomen, and potters.[49] They also carried water to serve the immediate needs of their family. However, in all these studies, the water carrier is understood through mediated sources. The voice of the water carrier, so defined, is absent.

This historiography leaves us with a critical problem: how to write a history of the water carrier at all?[50] Such a thing is not possible, however, a history of water carrying can be parsed through a careful disentanglement of a complex array of representations. The archive on water labor is substantial, and carefully collated provides a reasonable descriptive history of some aspects of both the task and profession of water carrying. This chapter stakes a particular claim in a specific way of using this archive. As such, there are some patterns of representation and corresponding methodological imperatives that I will highlight briefly.

British and French textual representations of water carriers are common. They can be found in government reports, scientific and historical bulletins, conference proceedings, travel literature, and guidebooks. In scientific and government publications, European sanitation officials and other administrators sought to neutralize and nullify the continued

[48] John Chalcraft, *The Striking Cabbies of Cairo and Other Stories: Crafts and Guilds in Egypt, 1863-1914* (Albany: State University of New York Press, 2004).

[49] Tucker, *Women in Egypt*, especially chapter 4.

[50] In my introduction I consider this methodological problem in more detail and argue for the careful and discrete documentary value of such representations. The water carrier can be considered subaltern.

presence of the water carrier through pointed representations, relegating them to an aesthetic picturesque, an ornament meant to please tourists and potentially frustrate modern systems, but never as a critical actor in city infrastructure. Popular accounts exoticize the water carrier, making them an object of consumption for the European touristic gaze (figs. 1.2-1.3). I use some of these carefully to build a description of water carriers as, according to my research, Egyptian Arabic sources do not usually attend to similar everyday details. Edward Lane's *Manners and Customs of Modern Egyptians* is particularly useful in this respect, even as its frame and commentary firmly resides within the Orientalist tradition.[51]

In contrast, Egyptian Arabic textual representations of water carriers are more nuanced and complicated. Some Arabic narrative sources romanticize the water carrier in a similar fashion to British and French texts, but others show that the professional water carrier was not in most circumstances distinguished from any other person in the context of water infrastructure gaps. Newspaper articles, which I use frequently in this chapter, focus on the labor of carrying water as the central issue, especially but not exclusively for the poor. This is an important distinction that I attempt to emphasize, as anyone in urban Egypt could be a water carrier. Additionally, these texts spatialize and localize tap distribution as a matter of importance and urgency; street names, neighborhoods, the people of these places are the carriers affected by incessant service gaps. These sources notably include significant

[51] Edward William Lane, *The Manners and Customs of the Modern Egyptians* (London: J. M. Dent & sons, 1836). Edward Said uses Lane's text as a primary source to discuss the episteme of Orientalism. See: Edward Said, *Orientalism* (New York: Vintage Books, 1979), especially part 2, in which he analyzes how Lane and others repackaged knowledge of the Orient for western consumption. Also see: Leila. Ahmed, *Edward W. Lane: A Study of His Life and Works and of British Ideas of the Middle East in the Nineteenth Century* (London: Longman, 1978). Ahmed indicates Lane identified with the Egyptian upper class, which affected his representations of members of the lower classes.

topographical, geographical, and even demographic details that speak to the immediate concerns of a local audience. This is not the case in European sources, which synthesize, categorize, and generalize to the extreme.

My primary contribution, however, is to incorporate the significant visual archive that has been all but ignored in the study of urban Egyptian water infrastructure, including water labor. There are *hundreds* of extant photographs from the 1870s-1930s depicting water carriers in Egypt, none to my knowledge have been examined to any critical extent.[52] These are fundamentally orientalist and aim to other and commodify water carriers for European and American consumption.[53] But they can be read against the grain to show patterns of water access that indict positivist narratives of urban water infrastructure modernization. Among other things these images attest to the saturation of water carriers in urban space, wading into the Nile, waiting at taps, and walking through the streets. I use these photographs in conjunction with historical maps to spatialize water labor. Maps in this chapter are a way to synthesize and illustrate the potential traces of a water carrier's movement through the city, to highlight the diffusion of water infrastructure in various forms, and to designate key locations of water distribution.

[52] The number is much higher if we include other countries. Water carriers were photographed throughout the world during this time. The water carrier in Egypt as a subject attracted an international array of artists and photographers, including Ottoman, French, British, and American.

[53] There are challenges to using exploitative imagery as evidence. It is important first and foremost to recognize the circumstances of creation, which were not for the benefit of those pictured, as is the case of the water carriers I will discuss. But, as Ariella Azoulay argues, there is substantial value in using this archive to uncover other histories, or even potential histories. See: Ariella Azoulay, *Potential History* (New York: Verso, 2019).

Water Carriers and Water Labor

The nature of water labor changed from 1870 to the 1930s, but a few elementary aspects remained consistent across this time. A professional water carrier (*saqqa*, pl. *saqqayin*) was part of low-wage manual laboring class of porters. Their work intersected with itinerant food and drink vendors, and sanitation workers such as pipe cleaners (*musallakatin*), or garbage men (*zabbalin).* Water is extremely heavy, and the labor was arduous, and physically deleterious. Some water carriers may have had carts and pack animals but much of the labor was likely completed manually, carrying water from a potable source, such as the Nile or one of its canals or tributaries, or a water tap, to a second location (figs. 1.4-1.5).[54]

Male water carriers, whether professional or otherwise, are most frequently represented as carrying a goatskin bag called a *qirbah.*[55] Women are often depicted carrying water in clay pots or even square metal containers on their heads (figs. 1.6-1.8).[56] Male water carriers shown pulling from the Nile and walking in the streets frequently employed walking sticks (fig. 1.9). Water sellers are also depicted carrying water in metal or clay vessels strapped to their backs, sometimes holding cups and a leather satchel, perhaps for

[54] This is an assumption based on the visual and textual archive. André Raymond also makes this assumption, in part due to the morphology of Cairo which did not allow for carts or animals in some of its narrower lanes. Certainly, carts and animals would be the preferred mode if funds were available.

[55] This word is sometimes transliterated as "ghirbah"

[56] Interestingly, I have not found any Egyptian examples of women holding a goatskin sack. They are always depicted as carrying water in pots on their heads, although the style, size, and type of clay pot differs. Women and children water carriers form a significant part of the visual and textual archive. The representation of women as water carriers is often highly romanticized in European art, a fact wryly criticized in the contemporary art of Houria Nourati. See: http://hourianiati.com/gallery.php?c=2. My thanks to Nuha Khoury for directing me to Nourati's work.

fare collection (fig. 1.10). These water vendors may have been selling flavored water, a profession that Chalcraft suggests gained in popularity after public taps became more widely available.[57]

There was a water carriers' guild up until about 1894, but the details of the organization, what membership entailed, and what benefits were included remains unclear.[58] There is evidence that water carriers were forced to work without pay on construction projects and as part of the fire brigade under Viceroy Ismail, taken advantage of to such an extent as to force them to petition the state to desist.[59] Water carriers and other manual laborers were also forced to carry water and undertake other sanitation services for the British army.[60]

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[57] Chalcraft, *Striking Cabbies*, 192.

[58] Raymond notes that according to the *Description de l'Egypte,* there were eight different water carrier guilds in Cairo in 1801. Raymond, "Porteurs d'eau," 190. An area of Cairo near Sayyida Zaynab is called Harat al-Saqqayin, perhaps in reference to the home of the guild or the amount of water carriers living there. Raymond discusses how this area is referenced in medieval texts. Gabriel Baer's work on guilds remains useful. He notes a decree from 1894 ended water carrying as an independent operation. See: Gabriel Baer, *Egyptian Guilds in Modern Times* (Jerusalem: Israel Oriental Society, 1964), 143-144. It is not clear from these sources if women were allowed, but it was common practice according to Baer for women to have separate guilds for the same occupations. See Baer, *Egyptian Guilds in Modern Times,* 33.

[59] Chalcraft includes a brief translated portion of this petition, Chalcraft, *Striking Cabbies,* 85. Also see page 45 for description of conscription for fire service. For petitions as evidence of people's relationship and participation in governance, see: Maha Ghalwash, "On Justice: Peasants, Petitions and the State in Mid-Nineteenth-Century Egypt," *British Journal of Middle Eastern Studies* 43, no. 4 (2016): 523–40; John Chalcraft, "Engaging the State: Peasants and Petitions in Egypt on the Eve of Colonial Rule," *International Journal of Middle East Studies* 37, no. 3 (2005): 303–25.

[60] During British occupation manual laborers such as porters and water carriers were in high demand and in some cases the locals were unable to fulfill the needs of the British army. In part because of this, the British continued the corvee system in regard to porters and other manual laborers well after the system had been officially abolished. David Killingray, "Labour Exploitation for Military Campaigns in British Colonial Africa 1870-1945," *Journal of Contemporary History* 24, no. 3 (1989): 483–501.

Not all water carrying was completed by professional water carriers. Indeed, we can assume from the Egyptian Arabic sources that most people carrying water at any given time were not professionals, especially by the 1930s. Chalcraft has shown that such laborers transitioned to other industries in the early twentieth century, and the raw number of saqqayin steadily decreased.[61] Despite this, water carrying continued to be essential, and water carriers remained. Women and men carried water from the public tap to their homes for the family. Other labor, such as cleaning, required a regular supply of water that may or may not have been provided by a professional saqqa. Water carrying as a task and water carrying as a profession were likely not necessarily considered distinct from the perspective of anyone in line at the tap.

The Water Carrier's Path: Patterns of Movement and Distribution 1800-1890

For most of the nineteenth century, water management was highly localized and inextricably linked to the morphology and legal system of the city. Neighborhood leadership (*shaykh al-hara*) was responsible for keeping the streets under his purview passable. Neighborhoods were largely independent from each other, and the shaykh al-hara oversaw most local matters.[62] Only a few issues were managed at a pseudo-municipal level including assuring an accessible public clean water supply. At Cairo the latter amounted to the governor (*shaykh al-balad*) making sure the Khalig, Cairo's main canal, was properly maintained.[63] Water was gathered by individuals for themselves or others, the latter paid for

[61] Chalcraft, *Striking Cabbies*, 59.

[62] Abu-Lughod, *Cairo*, 71.

[63] Ibid, 72. The muhtasib and qadi (chief judge), two other important municipal positions, would be responsible for the courts (the latter) and the marketplace (the former). The muhtasib had broad purview over managing many aspects of city life. See also 73-74 in Abu-Lughod, *Cairo.*

by individual families or institutions. Waste removal from homes was similarly discrete. The act of gathering and removing waste was largely free: the labor could be obtained for a modest fee.

The 1809 map of Cairo included in *Description de L'Egypte* (*DE*) produced by the scientific arm of Napoleon's expedition serves as a useful tool to sketch the late Ottoman water infrastructure landscape (figs. 1.11-1.13). Cairo had many different types of water resources. Canals, lakes and ponds, an Ayyubid-era aqueduct that ran from the Nile to the citadel, and of course hundreds of public free water fountains (*sabil*, pl *salsabil*) that dotted the city, notated on the map by either the French word *citerne* or a number corresponding to a particular named monument. Sabils cluster along major roads, squares, or within semi-private alleys (*atfa*, pl. *utaf; darb* pl. *durub*).[64] A large group of water fountains lies in the northeastern quadrant of the city corresponding to the densest part of Ottoman Cairo, the medieval Fatimid palace city of al-Qahirah founded in 969.[65] Public fountains often cluster near major monuments and gates, such as at the mosque of al-Mu'ayyad. The *DE* map is comprehensive in this sense, but building footprints are largely absent, except in the case of large historic structures. Thus, we get a sense of the pattern of water, but little appreciation of its monumental scale.

[64] The hara pl. harat/hawari is the smallest division, often composed of several blind alleyways, labeled either *atfa*, *utaf* or *darb*, *durub* in maps and archival records. Until the time of Muhammad Ali, many neighborhoods and alleys had gates that would be closed at night for safety. The French destroyed many of these, and Muhammad Ali outlawed them and many other types of objects, such as benches (mastabas) deemed to impact the flow of traffic.

[65] This excludes Fustat, which was much older. Bulaq was founded as the city's main port after the Nile bed shifted to the west during the medieval period. See Abu-Lughod, *Cairo*, 27-36. Until that time the main port was at al-Maqs, corresponding roughly to the location of Azbakiya.

The sabil was a key part of Cairo's Ottoman water infrastructure. They were generally founded and supported through the *waqf khayri* (public good endowment) system.[66] Waqf (pl. *awqaf*) properties such as sabils were public service buildings commissioned by wealthy patrons and granted in perpetuity to religious institutions or other guardians to manage. Their maintenance was ensured by additional, often physically attached revenue-generating properties such as shops.[67] No fee would be charged for a patron to use a public fountain. Building fountains was especially popular during the eighteenth century, but Ottoman Cairo retained many earlier structures from the Mamluk period, often attached to large religious complexes such as the Mosque and Madrasa of Sultan Hassan.[68]

The *sabil-kuttab* (fountain and school) of Abd al-Rahman Katkhuda built in 1744 is a useful example (figs. 1.14-1.16). Katkhuda is an official title similar to steward, and Abd al-Rahman served in this capacity in the sultan's janissary, or elite household infantry.[69] This structure is believed to be the first of many of Abd al-Rahman's philanthropic buildings and

[66] Doris Behrens Abouseif, et al., "Wakf," in: *Encyclopaedia of Islam, Second Edition*, Edited by: P. Bearman, et al (Leiden: Brill, 2022).

[67] The management of waqf properties is a complex subject. For an excellent historical and broad geographical overview, see citation in note 65 above. For Egypt, see: Doris Behrens-Abouseif, *Egypt's Adjustment to Ottoman Rule: Institutions, Waqf and Architecture in Cairo (16th & 17th Centuries)* (Leiden: Brill, 1994). Waqf administration went under significant changes during the late nineteenth century. For this, see: Paula Sanders, *Creating Medieval Cairo: Empire, Religion, and Architectural Preservation in Nineteenth-Century Egypt* (Cairo: American University in Cairo Press, 2008), 13-19.

[68] On the construction of fountains during the Ottoman period, especially the eighteenth century, see: Shirine Hamadeh, "Splash and Spectacle: The Obsession with Fountains in Eighteenth-Century Istanbul," *Muqarnas* 19, no. 1 (2002): 123–48; in Ottoman Egypt: Behrens-Abouseif, *Egypt's Adjustment*.

[69] Speiser, Philipp, "ʿAbd al-Rahman Katkhuda," in: *Encyclopaedia of Islam, THREE*, Edited by: Kate Fleet, et al. (Leiden: Brill, 2022).

was commissioned upon the steward's return from pilgrimage to Mecca.[70] The building type and style are representative of the late Ottoman period: a free-standing sabil with grilles on at least two sides through which an attendant, also called a saqqa, would pass water to anyone who requested it. An attendant was also responsible for cleaning the cups and making sure the water was clean and free of debris.[71] During Ramadan, the attendant was paid to tend the fountain all night.[72] The sabil includes basins and an underground cistern for water storage. An elementary school was housed on the second floor of the building.

Another way in which members of the elite or merchant classes like Abd al-Rahman Katkhuda provided water for city dwellers was to place freshwater pots (*zir* pl. *azyar*) in front of houses and shops (fig. 1.17). Zirs were made of unglazed baked clay and often lined with alkaline or similar minerals that were believed to help clean and clarify the water. A narrow opening prevented excess evaporation, but as evaporation occurred, the water would naturally cool, making clay storage containers of all sizes popular and useful. Marble or clay stands were likely used to catch and retain any of the water that had seeped through the

[70] André Raymond, "Les Constructions de l'émir 'Abd al-Rahman Kathuda au Caire," *Annales Islamologiques* 11 (1972): 237.

[71] A sample waqfiyya (foundation document) from a Mamluk sabil provided me with the basic information. For this waqfiyya, see: Saleh Lamei Mostafa, "The Cairene Sabil: Form and Meaning," *Muqarnas* 6, no. 1 (1988): 33–42. The author includes a transcription and translation of parts of a 15th century sabil waqf. Specifics varied among waqfs. For an example employee stipulations for a mosque complex that also included a sabil, see: Daniel Crecelius, "The Waqf of Muhammad Bey Abu Al-Dhahab in Historical Perspective," *International Journal of Middle East Studies* 23, no. 1 (1991): 57–81.

[72] Mostafa, "The Cairene Sabil," 41.

unglazed clay (figs. 1.18-1.19).[73] Some pots also had lids, often with patterned perforations, to keep out insects.[74]

During a holiday, wealthy patrons paid water carriers to walk through the streets and provide water to celebrants. This was an especially common form of charity for a *mawlid* (saint's birthday). One English traveler at the beginning of the twentieth century noted that both zirs and hiring a water carrier were very popular:

> The water-carriers are a very familiar sight in Cairo…they fetch the water from the Nile to the houses where the women of the family are too well off to work in the fields…A favorite form of charity … is to set a zeyr (sic) outside his house for the benefit of the thirsty passers-by, and this he pays a water-carrier to keep full regularly. The water-sellers, too, are often hired by some rich man to dispense water gratuitously to everyone for the day, generally some day of feast.[75]

The water carrier was an important part of the soundscape of Cairo and Alexandria. The traditional call of the water carrier vendor was: "God will compensate, God will provide."[76] On feast days the call would change to: "Here is God's fountain, for the thirsty."[77] In the latter case, Edward Lane describes that the patron followed the water carrier, and sometimes the water carrier turned to him saying, "May God forgive their sins, dispenser of water."[78]

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[73] Margaret S. Graves, "The Monumental Miniature: Liquid Architecture in the Kilgas of Cairo," *Art History* 38, no. 2 (2015): 304–23.

[74] My thanks to Nuha Khoury for this information on zir lids.

[75] E. L. Butcher, *Things Seen in Egypt* (England: Seeley Service, 1912), 128.

[76] يهون الله يعوض الله. These are the first two lines of Lahan al-Saqqa, a song composed by Sayyed Darwish and Badi' Khairy. For a transcription and translation of portions of this song in Arabic, see: Shehab Ismail, "Epicures and Experts." See Lane for his description of itinerant water vendors: Lane, *Manners and Customs*, 154-157; Baedeker, *Egypt,* 35.

[77] سبيل الله يا عطشان يا مياه . Baedeker, *Egypt*, 35-36.

[78] Ibid; Lane, *Manners and Customs*, 322-323.

Households also needed a steady supply of water. Bayt al-Kritliyya, now part of the Gayer-Anderson Museum, is an eighteenth-century Ottoman structure with several water fixtures that required daily attention.[79] The fine house includes a private garden with trees and flowers, a courtyard with a decorative fountain (*fasqiya*), latrines on each floor, a public sabil with an underground cistern, and a well (figs. 1.20-1.22). Most such large houses included at least one cistern or well to store water pulled during high Nile. The professional water carrier's journey likely ended at the courtyard, but the trace of water on their back extended into the house and to each inhabitant.

Water carrying and the water carrier were ubiquitous in the nineteenth century. They formed the primary mode of water distribution, whether directly to homes or to other centralized charitable sites such as sabils and zirs. Water companies shifted these water patterns, affecting water carriers, water carrying, and their representation.

Shifting Water 1870-1910

Three major shifts occurred at the end of the nineteenth century that changed the path of the water carrier. First, the rise of the corporate water company, which aimed to commodify water and modernize city water infrastructure for profit. Second, broad acceptance of the importance of microbiologically defined clean potable water for controlling infectious diseases such as cholera. The role of the government in this capacity was fraught and unresolved, but by the end of the nineteenth century ensuring clean water for public health became a priority for many local and national colonial administrators,

[79] The online virtual tour provided by the Egyptian Ministry of Tourism and Antiquities is a useful way to better understand the space of these houses: https://egymonuments.gov.eg/museums/gayer-anderson-museum/. The Gayer-Anderson Museum is two houses, Manzil Kritliyya and Manzil Amina Bint Salim. Both date to the eighteenth century. The houses are nestled right against the walls of the Ibn Tulun mosque.

sometimes under the auspices of municipal governance, sometimes specialized public health or public works departments. Stricter regulation of water distribution and wastewater removal, including surveillance and tracking of water carriers, soon followed. Third, open water sources were drained, closed, and access to them was overtime restricted. This included the closing of Cairo's main canal (the Khalig) in the 1890s, and recurring projects to fill seasonal ponds.[80] I will focus on the role of the corporate water company here and its intersection with water carrying and the water carrier.

The Water Company

In Egypt, foreign investors took advantage of Viceroy Ismail's desire to quickly modernize, negotiating lucrative concessions in exchange for providing the capital, labor, and expertise to implement a complex water works system.[81] Once the system was in place, companies charged consumers for piped and filtered water, transforming water into a commodity. This was in stark contrast to Egypt's Ottoman system, which was essentially free. Water carriers and other water laborers made a living on water; they did not get rich from it. The new system aimed to replace gratis water provision, shifting the responsibility

[80] Projects to fill ponds were reported on frequently in newspapers such as *al-Ahram* as *ilan* or advertisements/announcements posted by the Department of Public Works (Diwan al-Ashghal). The reason for these projects (*mashru')* was almost invariably justified as in the interests of public health, a fact that I discuss in chapter two and three in more detail.

[81] This was a common method of entering foreign markets cheaply, and the bankruptcy of Egypt in 1879 and the Foreign Debt Commission's subsequent control of Egypt's finances exacerbated the negative effects on local entrepreneurs. Any hope of local investors building and profiting from services and utilities was drastically reduced. The Debt Commission awarded large contracts exclusively to Commission nations. Aaron Jakes discusses the economic impacts of the Debt Commission in detail, especially the suppression of local Egyptian business: Aaron Jakes, *Egypt's Occupation: Colonial Economism and the Crises of Capitalism* (Stanford, California: Stanford University Press, 2020).

for acquiring clean water to the consumer.[82] Clean water was now available for a price, rather than part of the shaykh al-balad's duty of leadership.

The first water company in Egypt was technically an Egyptian company, although its engineers and much of its leadership were French. The company was founded by Jean-Auguste Cordier in 1857 in Alexandria and 1865 in Cairo. Cordier bought concessions for sole water rights in both Alexandria and Cairo, the former lasting for 25 years and the latter for 99 years.[83] The company made limited progress in both cities, and its concessions were sold in 1870 to the Cairo Water Company and 1879 to the Alexandria Water Company. The Cairo Water Company was overseen for decades by members of the Nubar family, lifelong Egyptian government administrators and diplomats.[84] By 1875 the family oversaw the installation of a water works (reservoir, filter beds, storage tanks) at Abbasiya that filtered and stored Nile water to flow through the company's metal pipes to public taps and into homes and establishments (fig. 1.23). The company replaced this water works by 1915 with a new complex at Rod al-Farag on the banks of the Nile, just to the north of the Cairo Water Company offices in Bulaq (fig. 1.24).

The Alexandria Water Company's 1879 charter provides details on the organization, duties, and profit structure of the company, as well as its intended relationship to the people

[82] For these specific duties of governorship in the Mamluk and Ottoman periods, see: Behrens-Abouseif, *Azbakiya and its Environs*.

[83] Samir Saul, *La France et l'Égypte de 1882 à 1914: intérêts économiques et implications politiques* (Paris: Institut de la gestion publique et du développement économique, 1997): http://books.openedition.org/igpde/746, especially chapter 2.

[84] Arthur Goldschmidt, *Biographical Dictionary of Modern Egypt* (Boulder: Lynne Rienner, 2000), 157-158; "Assemblé générale du société anonyme des eaux du Caire," (March 19, 1909), Bibliotheca Alexandrina Memory of Modern Egypt, digital archive collection: modernegypt.bibalex.org/NewDocumentViewer.aspx?DocumentID=DC_6243.

and the Alexandria Municipality.[85] The charter granted the company the right to build underground pipes and to pump water directly into people's homes. The document also stipulates that the company would take control of any government-owned cisterns. This transferred various ostensibly public water storage facilities into private hands. In exchange, the company was required to provide the startup costs for the water works, as well as build, install and maintain taps for the poor in certain areas of the city.[86] However, the details of provision and management of charitable taps (*hanafiyat al-sadaqa*) is not clear, and correspondence attests to perennial disagreements regarding the company charging the poor excessive prices.[87]

In both Cairo and Alexandria, the spread of water company infrastructure was slow but steady. Cairo Water Company statements indicate that 10,000 meters of underground pipe were laid before the company taps opened on March 31, 1865, and another 3,500 were laid by December of that same year. The amount of pipe installed per year afterwards varied significantly between 1865 and 1891, with only 200 meters installed in 1882.[88] In 1891 the

[85] TNA FO 141/499/13. The original 1879 agreement is between the company and the central government. By about 1880, the company was mostly dealing with the Alexandria Municipality, as evidenced by the correspondence in this file. Ostensibly the water company charged less for water intended for the poor, and the municipality picked up the tab. It seems as though there is some accusation that the water company was still charging people for use of the taps. The documents are not clear on this point, but the language around the pricing rules is suggestive.

[86] By 1883 the government was paying 6,000 EGP per year for water for public and municipal purposes. "Further Reports Respecting the Cholera Epidemic in Egypt and the Proceedings of the German Scientific Commission," Commercial No 22 (London: House of Commons Parliamentary Papers, 1884), 24.

[87] TNA FO 141/499/13, especially see pages 38-45 in the record of contracts.

[88] 1882 was a tumultuous year, so this disruption is not surprising. Among other things, Ahmad Urabi led a popular rebellion against Viceroy Tawfiq, which led to the occupation of Egypt by the British in July of that year. For this series of events and their impact on modern Egypt, see: Cole, *Colonialism and Revolution*.

company installed 12,763 meters of pipe.[89] The number of cubic meters of water carried through these pipes to customers increased in tandem, from 3,370,000 in 1872 to 19,188,115 in 1908.[90] An increase in the amount of piping and water pumped through it would seem to indicate more customers served. However, as I will discuss below, the population of Cairo during this time greatly expanded. Clean water access likewise became a major issue.

Community Distrust and/in Bad Water

Both the Cairo and Alexandria water companies were at the center of multiple scandals, bad press, and various accusations of failure to provide clean water at an affordable price. Together these incidents show that Egyptians across classes were highly invested in the issue of clean water provision, and well informed on the scientific, economic, and logistical complexities surrounding urban water supply. The people reacted to the shortcomings of corporate water schemes in different ways, by petitioning the state, attacking the companies in the press, breaking taps, and spreading rumors. Numerous snippets in newspapers attest to a major rumor problem, including that fish periodically came out of Cairo Water Company private and public taps.[91]

Public criticism of water companies increased during times of public health crisis, such as the cholera epidemics of 1895 and 1902. The government and water companies were

[89] A table of various statistics kept by the Cairo Water Company for these years is reproduced in: Amin Sami, *Taqwim al-Nil* (al-Qahira: Matba'at al-Amiriya, 1915), vol 3 no 2, 858-859. Sami also included a facsimile of the water company's response regarding his request for information. For this, see letter number 166 included in between pages 856 and 857. The Arabic translation of the letter (originally in French) is on page 858.

[90] For the numbers from 1872 (the earliest number recorded according to a letter from the Cairo Water Company) to 1891, see Sami, as in note 83 above. For 1907 and 1908, see "Assemblé générale du société anonyme des eaux du Caire."

[91] *Al-Ahram* (March 20, 1895): 3; *al-Ahram* (August 1, 1911): 2.

both implicated in the struggle to find clean water in the city and the countryside.[92] Not coincidentally, government surveillance of free open water sources increased during such times. Municipal governments, the Public Health Department (*Diwan al-Sihha*) and the Public Works Department (*Diwan al-Ashghal*) undertook special projects to restrict direct canal and Nile access, and close and fill private shallow wells. This included blocking off access to the Nile and canals as well as surveilling popular gathering places and potentially imposing penalties for prohibited activities such as washing clothes at drawing sites.[93] In tandem, officials directed people to company taps and government-installed subsoil wells. Intentions for many of these changes were based on advances in the study of microbiology and medicine designed to curb the spread of infectious disease and common digestive maladies.[94] However, people criticized the way that these changes were implemented, especially the fact that water company executives, identified frequently as foreign capitalists, benefited directly from them.[95]

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[92] *Al-Mu'ayyad* (September 17, 1902): 5; See also: Nancy Gallagher, *Egypt's Other Wars: Epidemics and the Politics of Public Health* (Syracuse: Syracuse University Press, 1990).

[93] "Report on the Epidemic of Cholera…1895 & 1896," 54.

[94] British colonial officials were especially critical of canal and Nile water use and their link to diseases and other maladies that caused infants and children to die. Lady Cromer, the wife of consul Evelyn Baring, for example, founded several institutions to "educate" Egyptian women on proper childrearing. For some discussion of these, see: "Egypt and the Sudan in 1909," *British Medical Journal* 1, no. 2579 (1910): 1361–62. These institutions were called dispensaries and they appear on maps of Cairo from the late nineteenth and early twentieth century. And yet, British colonial policy curtailed the medical education of young women, as discussed in the introduction.

[95] The Alexandria Water Company was technically a British entity, and any lawsuits were adjudicated in the Mixed Courts. Even though the Cairo Water Company was technically Egyptian, it was clearly understood by the people as a foreign company.

Indeed, people were skeptical of government and water company alliances and persisted in attempts to circumvent the imposition of a centralized (capitalized) water distribution system. In Alexandria the municipal government was frequently preoccupied with determining the reason that a significant portion of the public avoided company taps, even if they were free.[96] Rumors in part cultivated during the cholera epidemics that the government or the water company (or both) were poisoning taps and wells invigorated resistance against the corporatization of water access. The Alexandria municipal government distributed pamphlets in Arabic and French to encourage using the water company taps to prevent exposure to cholera and other diseases. These were placed in public spaces and given to local shaykhs to distribute.[97] These invariably also condemned the use of open free water sources. But people were not blind to the fact that promoting water company taps seemed to first and foremost benefit the water company and the government.

Thus, water carriers continued to pull water from the Nile and canals even as the government attempted to dissuade people from doing so. Efforts to direct people to pay for water company water, either through indoor plumbing or from public taps rather than use other sources were driven by profit. Sources mention the notable effect free water had on the corporate water company's bottom line. For example, one official noted in the 1898 Report of the Public Works Department that the low receipts for the Helwan Water Works were in part to be blamed on charitable taps: "this establishment is worked at a profit to the Government, in spite of a large quantity of water being supplied gratis to the poorer

[96] Municipalité d'Alexandrie, *Exercice 1907. Rapport de l'administrateur. Notes ees divers services* (Alexandria, Egypt: Société de publications égyptiennes, 1908), 20-21.

[97] Water carriers were still charged to use any taps. Municipalité d'Alexandrie, *Exercice 1910. Rapport de l'administrateur. Notes des divers services.* (Alexandria: Société de publications égyptiennes, 1911), 12-13.

inhabitants…if this were to be added the valued of the water delivered gratis, the above profits (216 EGP) would rise to 1,341 EGP."[98]

As mentioned briefly in my Introduction, in 1905 the British colonial government made a choice to switch the supply of the Cairo Water Company water works from the Nile to subsoil wells.[99] This decision was based on preliminary evidence that there was plenty such water, and that its quality was better than the Nile and less susceptible to contamination. However, British colonial administrators vastly underestimated people's attachment to Nile water, and the latter protested in numerous creative ways, including spreading rumors that the well water made women's hair fall out and left a yellowish tint on clothing.[100] Incredulous at first, experts had to admit that the water was mineral-rich, which could cause difficulty making soap suds and leave residue on clothing. However, the government did not believe that these effects were valid reasons to change the plan. It would take years for the supply to be switched back to the Nile.

Elite Egyptian sources indicate that water quality was a key factor in people's criticism of the water company and its relationship with the government, even as all involved agreed on the importance of clean water for public health. In 1907, a petition to

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[98] "Report on the Administration of the Public Works Department" (Cairo: Wizarat al-Ashghal al-Umumiya, 1898): 39. The Cairo Water Company reports also included gratis fountain expenditures. Amin Sami notes that the Helwan Water Co was founded in 1888, as part of the Cairo Water Company. The Helwan and Giza Water Works were also part of the Cairo Water Company. Amin Sami, *Taqwim al-Nil*, vol 3 No 2, 859.

[99] "Cairo Water Supply," *The Lancet* (June 9, 1908): 1648; "A Crisis in the Water-Supply of Cairo," *The Lancet* (April 3, 1909), 1014-1015.

[100] Shehab Ismail discusses this controversy at length. Ismail, "Epicures and Experts." His argues in part that the sense of taste, as well as bringing forward local water practice, is critical to understanding the stakes of this controversy. The president of the Cairo Water Company, Boughos Nubar, mentions this issue in the 1908 report. See: "Assemblé générale," 14-15.

fully test the Cairo Water Company water was denied, and the mudir (editor) of *al-Ahram* laid out some key issues with the well-supply controversy. After describing numerous problems with the change, including people's preference for Nile water, the author noted that the insufficient well supply had caused the water company with full knowledge of the government to pull water from the Nile again, even though both entities attested that Nile water was not suitable for consumption. According to the editor the crux of the issue was that good water could not be found anywhere in Egypt because of such backhanded dealings. He concludes that the government and water company should stop playing childish games, ostensibly with people's lives.[101] Clearly there was ample reason for the public's suspicion of company water, even as British and French sources framed its rejection as superstition or ignorance.[102] In the case of the well controversy, Egypt was also experiencing a dire economic crisis, brought on in part by overspeculation in housing. The result was many (more) people unable to pay for basic necessities, including adequate housing and water.[103]

Even as the popular press painted water companies and the government as corrupt and one and the same, the relationship between the government and corporate water companies was complicated and often cool. It was reported that the Cairo Water Company

[101] "Miyah al-Qahira," *al-Ahram* (August 24, 1907): 1-2. *Al-Ahram* continues to be published today, and at the time was a daily newspaper of about 4-8 large sheets that focused on international and national news.

[102] Ismail, "Epicures and Experts."

[103] There have been few studies on the 1907 global financial crisis in Egypt. For an overview, see Jakes, *Egypt's Occupation*, especially chapters 6-7. For a consideration of housing as a commodity and its intersection with the 1907 crisis, see: Shehab Ismail, "Engineering Metropolis: Contagion, Capital, and the Making of British Colonial Cairo, 1882-1922" PhD Diss, Columbia University, 2017, chapter 2.

retroactively charged the government 20,000 EGP for the installation of charitable taps in 1902, without the government's knowledge or prior agreement.[104] The Alexandria Water Company and the Alexandria Municipality were frequent adversaries. In 1903, the municipality accused the company of having a problem with its filters and thus failing to provide suitable clean water to the city. It issued numerous threats, mostly in the form of fines. The company dragged its feet until finally issuing a report blaming the municipality for causing the water contamination with its dredging operations upstream of the company intake on the Mahmudiya Canal.[105]

Patterns of Uneven Distribution

The implementation of modern water fixtures was sporadic and uneven, and a relatively small number of urban elites received initial access to piped filtered water. In 1891, only 4200 homes in Cairo received water directly from pipes.[106] In Alexandria the situation was similar. In 1883 about one third of the water pumped by the Alexandria Water Company went directly to private homes, and in total the company was supplying about 20 gallons of water per day per person in this manner. The rest of the water was distributed to standpipes and taps in the city and collected by people from these central locations.[107] The

[104] *Al-Mu'ayyad* (August 9, 1902): 5.

[105] See: "Délegation municipale, séances de l'années 1903" unpublished meeting minutes, Archive of Centre d'études Alexandrines: http://bdd.cealex.org/diffusion/etud_anc_alex/LVR_000004_w.pdf. Shifting blame was a common strategy in such disputes, including claiming contamination happened outside of local purview.

[106] Raymond, "Porteurs d'eau," 201. This number refers to the amount of people receiving water through a monthly subscription, priced by cubic meter of water, to their homes. The price was lower by cubic meter the more consumed, defined by tiers, such as 1-25 cost about 27 milliemes per cubic meter in 1927. The government's prices were lower for each tier. For details on the pricing system in 1927, see: *al-Ahram* (August 19, 1927): 4.

[107] "Further Reports…" Commercial No 22, 24.

situation improved slightly over the next 40 years, but gaps persisted. According to 1910 municipal documents, 85% of Alexandria remained disconnected from sewer and potable water lines.[108] Despite hopes of significantly increasing this number, a change to the Alexandria Water Company's charging system from a flat rate per month to a meter caused a significant public relations uproar. [109] Unpopular policies and poor management plagued water companies, making government claims that their services were beneficial to the public and the modern city suspect.

Despite this, water infrastructure modernization via the corporate water company was considered an improvement and people greatly desired the comfort and convenience of indoor plumbing.[110] Filtered water and mechanized waste removal through large sewage collectors stemmed mortality, even as most deaths were still attributed to digestive disorders into the twentieth century.[111] However, the price of installing indoor plumbing was prohibitive and shouldered by the private individual. The cost was especially steep for homeowners in the older quarters of both Alexandria and Cairo. Rather than undertake the cost of retrofitting old homes, affluent residents often chose to move into new homes already fitted with plumbing. In Cairo people moved to the neighborhoods of Azbakiya, Abdin, Shubra and later Heliopolis and Ma'adi. Public trams enabled this shift, as people could

[108] Municipalité d'Alexandrie, *Exercice 1910,* 85.

[109] Alexandria Water Company customers paid a flat rate for unlimited water supply until the twentieth century when a meter system was established. See essay titled "History of the Alexandria Water CO, 1936," included in: FO 141/499/13.

[110] For a discussion of cold and hot water taps as the latest development, see: "Akhbar Wataniya," *al-Muqtataf* 1, 5 (1880): 29.

[111] *Al-Ahram* (August 24, 1907): 2. The author argues that 80% of deaths in 1907 were the result of digestive maladies. For sewage removal and improvements in public health, see Ismail, "Nature's Metropolis," chapter four.

move about the city quickly for a fare. The same was true in Alexandria. Upwardly mobile residents moved to Ramleh and Stanley Bay for modern coveniences, and beachside property.[112] Practically speaking, this meant that manual water carrying from public sources remained essential for most of the population who could not afford to move.

Even as the fraught process of water infrastructure modernization required the continued presence of water carriers, colonial rhetoric aimed to distance water carrying from the modern system it inextricably supported. According to one administrator, Jean-Baptiste Piot:

> As it is, the provision of water by taps, even as few as there are, constitutes already a very real progress from the past, in which the saqqa walked with his sack among and into every Cairene house. Yes, from this point of view, local color, so dear to artists, will disappear little by little from the large ancient Egyptian city. [Yet] the hygienist will applaud with all his heart the immense progress which results from [the saqqa's] disappearance.[113]

Such remarks depict manual water carrying as unhygienic and the antithesis of mechanical water systems, whereas in reality they were codependent, forming a necessary symbiotic relationship. Piot's statement suggests that in 1894, the spread of taps must lead

[112] Ramleh is the general name for Alexandria's eastern suburbs, including Sidi Gaber and Ibrahimiya. Moving to newer areas created a bit of a vacuum in terms of the upkeep of the older quarters. Property was sold or abandoned, and then taken over by people who could not afford newer homes, nor could they afford to retrofit old ones. Mohamed Gamal Abdelmonem, "Cairene Homes of Modernity: The Changing Architecture of the Home in Early-Twentieth-Century Cairo," *Traditional Dwellings and Settlements Review* 26, no. 1 (2014); Gehan Selim, "Instituting Order: The Limitations of Nasser's Post-Colonial Planning Visions for Cairo in the Case of the Indigenous Quarter of Bulaq (1952-1970)," *Planning Perspectives* 29, no. 1 (2014): 67–89. There is a very important link between providing water infrastructure as part of providing adequate housing.

[113] Jean-Baptiste Piot, "La Question de l'eau d'alimentation dans les villes du Caire et d'Alexandrie," *Bulletin de l'institut egyptien*, June 1894, 267–75. J-B Piot led the Department of Veterinary Services as well as serving in a few other positions. He was also on the board of the Cairo Water Company.

necessarily to a decline in water carriers. The visual archive shows us that the water landscape was not so discriminate from 1894 into the 1930s and did not end in the disappearance of water carrying. Water carrying existed alongside (to enable) pumps and wells, as part of modern Egypt, its cities its peripheries and its countryside.

As a matter of ideology water carrying and modernity conflicted in the pages of acerbic newspapers and magazines and in policy slogans, rather than in the street or historically. After all, urban Egyptians had used sophisticated water technology including pumps and pipes since at least the medieval period, albeit of a different kind and at a different scale.[114] The idea of a collision of modern and something other than was a matter of perception, and a matter of representation. In one stereograph titled *The Old and New in Egypt*, a girl with a clay pot on her head is framed by the pyramids (fig. 1.25). She stands in front of a pumping station that would help to enable irrigation of agricultural lands in the hinterland of Cairo. She and a man to her left in a tarbush and vest are both smiling. What is old/ancient, new/modern is ostensibly the pyramids and the pump, and the water carrier exists within both. Water carrying from, in the midst, and because of machinic advancements persisted everywhere.

Water Carriers Waiting in Line at Taps 1900-1938

A number of stereograph contact prints and negatives that date in between 1900-1935 held by the University of California Riverside Museum of Photography in the Keystone Mast Collection show water carriers standing at taps in Egypt (figs. 1.9, 1.27, 1.28, 1.38). These are artifacts generated for armchair tourism and object learning in public

[114] Amalia Levanoni, "Water Supply in Medieval Middle Eastern Cities: The Case of Cairo," *Al-Masaq* 20, no. 2 (2008): 179–205.

school education in which people could "experience" faraway places without travel.[115] But in light of the history outlined above, such photographs also expose modernity as a labor of bodies as much as pieces of metal, as a flawed, patchy, and manual process that required significant compromise in practice, in contrast to rhetoric that evoked an inevitable causal link between the installation of pipes and the disappearance of manual water carrying. The photographs also emphasize the complex spatiality of modern water practice. The conjunction of photographs of busy city public taps with municipal maps further illuminates an adaptive yet ambivalent urban Egypt, composed of many subtle confrontations between colonial systems and the colonized that publicly marked the inconvenient frayed edges of uneven capitalist development.

The stereographic medium is significant in this context. A stereograph is a set of two photographs, each almost the same but slightly offset so that when viewed through a stereoscope the combination of the two mimics human vision and provides the illusion of three-dimensional space (fig. 1.26). Stereographs frequently depicted prosaic and everyday images such as water carriers or other laborers, included in sets among scenes of famous monuments or views. Manufacturers claimed that through this simple mechanical

[115] Educational use of stereographs in the US was especially popular from 1900-1930s. For this topic and how it intersected with nurturing citizenship and US global intervention, see: Katie Day Good, "Sight-Seeing in School: Visual Technology, Virtual Experience, and World Citizenship in American Education, 1900–1930," *Technology and Culture* 60, no. 1 (2019): 98–131. Stereographs specifically were promoted suitable instructional objects because of their verisimilitude for those wanting to travel but unable to do so. See: Oliver Wendell Holmes, *The Stereoscope and Stereoscopic Photographs*, (New York: Underwood & Underwood, 1906); Albert E. Osborne, *The Stereograph and the Stereoscope, with Special Maps and Books Forming a Travel System; What They Mean for Individual Development, What They Promise for the Spread of Civilization* (New York: Underwood & Underwood, 1909). It is no coincidence these were published by a major American stereograph company, Underwood & Underwood. Oliver Wendell Holmes was also the inventor of the stereoscope.

contraption, one could experience the "real" Cairo without leaving the comfort of one's living room. Statements emphasize the verisimilitude of stereoscopes, as well as the primacy of vision in knowledge of place and space:

> Whatever ideas or emotions we gain in connection with the stereographs are such ideas and emotions as *those places and they only* could give…we shall get the emotions of the place…to just the degree that we are able to forget that we are looking at a stereograph and feel that we are in the presence of the place itself…[116]

In this way, stereograph sets capitalized on the interest of the European and American middle class in viewing (and thus knowing) the colonies.[117]

These images in content and form cater to the desire to see and "know" the everyday life of places as such an armchair tourist. In one stereograph, two men wait in line for a turn at the tap (fig. 1.9). The camera has been carefully placed to create the illusion that the viewer is next in line. The angle emphasizes the minutiae of pulling water at a tap. The water carrier at the front of the line holds the mouth of his goatskin sack to the tap. Spilled water darkens the front of the pump and slickens the ground on which he and the other water carriers stand barefoot. The man second in line seems to be pulling his sack forward from his back, preparing for his turn. He also carries a walking stick. Both water carriers wear similar robes and white caps. Hands to spout, eyes to water, both water carriers seem to ignore the photographer and the act of taking the photograph. The tap attendant, however, looks directly at the lens, a small smile just discernable on his face. The tap and attendant stand in the shade of the roof of a narrow shed. There is little sense for the setting, which is likely a busy, modern yet unpaved street in the middle of Cairo. A white-washed building

[116] Osborne, *The Stereograph and the Stereoscope*, 98.

[117] Rick VanderKnyff, "Parlor Illusions: Stereoscopic Views of Sub-Saharan Africa," *African Arts* 40, no. 3 (2007): 50–63; Osborne, *The Stereograph and the Stereoscope*.

with metal window grilles and modest, shallow balconies provides the backdrop. Another two men walk in the street in the background, their forms slightly blurred.

A handwritten note on the back of the stereograph, perhaps written by the photographer, reads: "These men are employed in sprinkling of the streets and labor all day for six piastres."[118] The note marks these water carriers as day laborers of the city employed in a specific task, watering dirt streets to reduce dust.[119] It also labels this pump or tap is a hydrant, perhaps indicating it was not primarily for drinking water but for cleaning and other water labor. However, stipulations for how water was to be used according to a certain type of tap are not necessarily discernable in other sources. Another photograph taken of the same tap and attendant with different carriers includes a similar note: "street sprinklers of Cairo filling their goat skins at a municipal hydrant in Cairo" (fig. 1.27). The framing and subjects are similar, except this time one of the water carriers looks directly out at the camera.

The framing and careful selection of setting divide this scene from the modern city in which it takes place. It is by no means coincidental that we cannot see much of the neat, modern building in the background, and that the street is unpaved. The angle and the framing separate the water carriers from the modern city that they serve. There were public

[118] According to the museum website, these notes were written by staff or photographers. See: "Keystone-Mast Collection," University of California Riverside Museum of Photography, accessed July 2, 2022, https://bit.ly/3AjvJDI. By the 1930s, published stereo cards often included historical or geographical notes on the back. Some stereograph and card sets might also include a companion book with a written "tour" of the deck. For such a tour, see: Jesse Hurlbut, *Jerusalem through the Stereoscope: A Part of the Tour Traveling through the Holy Land* (New York: Underwood & Underwood, 1911).

[119] This was normally a duty allocated at Cairo to the Watering and Scavenging Division of the Department of Public Works, but in other cities might be handled by the municipality or another local group.

taps throughout the city, from the city's new (paved) streets in Azbakiya and Shubra to unpaved lanes in Darb al-Ahmar or Old Cairo. Indeed, this photograph could have been taken in any one of these locations. Removing spatial cues gratify a specific set of orientalist expectations about such manual labor for armchair tourism. These aesthetic choices aimed to economically and culturally other the water carrier, and attempted to define water labor as pitiable, antiquated, and antimodern.

However, these photographs can be read otherwise. Within the context of the history of modern water, they also show us that the colonial project was incomplete, and that modernity was not monolithic. What do water carriers in 1935 in Cairo mean for British claims of "making progress" in Egypt? How do they reframe the confident statements of administrators such as Piot in 1894? As a group, such photographs prove the visual, spatial continual presence of water carriers, a fact that contradicted colonial administrators' claims that their leadership transformed Egypt *for the better.*[120]

Indeed, water carriers were necessary because of the colonial government's capitalist interests and alignments. The public adeptly perceived these conflicts, as described above, and the water carrier played various roles in this discourse and its practical consequences. Water carriers emerge in the colonial archive as necessary labor. They appear in budgets for road improvements and as a line item for maintaining Azbakiya Garden, a gated formal park in the district of the same name.[121] They also appear as rule breakers and recalcitrant

[120] The bibliography of British-authored apologia on the occupation is immense. One of the most frequently cited is: Evelyn Baring, Earl of Cromer, *Modern Egypt* (New York: Macmillan, 1916). As the de factor ruler of Egypt from 1882-1907 Cromer's opinion has often been considered paradigmatic. For a recent overview, see: Jakes, *Egypt's Occupation*.

[121] The official reports from the Public Works Department and the Alexandria Municipality are excellent sources for budgets that include water carriers and other water

troublemakers that resisted modernization in spite of themselves, or rather for reasons colonial and European interlocuters aimed to characterize as unreasonable, even perverse. During the cholera epidemics, water carriers were frequently characterized as dangerous and ignorant – as they supposedly pulled water from any source to distribute to family or to another consumer. One British colonial official remarked on water carriers in Damietta: "I have seen a woman empty the filthiest liquid into the river and another woman come immediately after and fill her pitcher with water for drinking purposes from the same spot before the water had become again clear."[122] In 1895 in Alexandria, officials refined a group of codes on pricing per goat skin, claiming inhabitants complained that water carriers were charging excessive and varied rates.[123] But perhaps the real reason that the saqqa was so denounced was due to their potential to disrupt profits. One official of the Public Works Department blamed water carriers for the Tanta Water Company's sluggish returns: "Intrigues on the part of the 'sakkas'…have doubtless had much to do with preventing the people of Tanta from taking the Company's water."[124]

The unstated though obvious paradox is that the water carrier remained necessary because of the organization of capitalist infrastructure projects, coupled with the central colonial government's and the Debt Commission's near vice-like grip on even the most

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and sanitation laborers. For one example: "Report on the Administration of the Public Works Department" (Cairo: Wizarat al-Ashghal al-Umumiya, 1912), 449.

[122] "Further Reports…" Commercial No 22, 28.

[123] Municipalité d'Alexandrie, *Lois, décrets, arrêtés et règlements intéressant la municipalité d'Alexandrie*, vol 2 (Alexandria, Egypt: Imprimerie générale A Mourès & Cie, 1906), 52.

[124] "Report…Public Works Department" (1898), 39.

minute budget increase for the expansion of critical city services.[125] It was both within this group's interest and purview to continue to portray the water carrier as a troublesome relic, as well as to continue to reproduce the circumstances that made them necessary.

The stereographs bring an uneasy immediacy to these conflicting circumstances. Moreover, it becomes apparent that without the water carrier, the entire water infrastructure system would collapse. This was a precarious position for the government, as the system required the diligent, willing (patient) participation of unpredictable human actors. One photograph in particular is representative of this issue (fig. 1.28). A very similar tap from the images discussed above is photographed from a short distance with a slight high angle. The line of water carriers is more apparent, some holding skins, others holding pots. The man at front is filling his goatskin directly from the tap. He rests his animal-skin bag on a table in front of the metal tap and fills the mouth from a hose. A bucket sits underneath to catch any dripping water, he stands on a stone or concrete slab that likely helps keep the area from becoming muddy, and potentially impassable. There are at least seven other people in line waiting. Some hold nothing, waiting perhaps for a drink from their hands, possibly for free depending on the designation of that particular tap. One man stands back with hands on hips, a familiar gesture of impatience. All of them are men, all of them wait.

The public tap required waiting as much as carrying, belying claims that modern meant mechanical efficiency. The water carrier's task was altered to include the quintessential modern task of queuing, something largely absent in images of water carriers

[125] The best studies on this particular issue have focused on Cairo's sewer system. See: Ghislaine Alleaume, "Hygiène publique et travaux publics: les ingénieurs et l'assainissement du Caire (1882-1907)," *Annales Islamologiques* 20 (1984): 151–82; Ismail, "Nature's Metropolis," especially chapter one.

pulling from the banks of the Nile (figs. 1.5, 1.29). In these photographs, water carriers spread out along landings and banks, wading into the water to find a sufficient current from which to draw water for any number of purposes. In contrast, views of lines at the tap, bring attention to the awkward, uncomfortable, and inconvenient limits of infrastructural modernity. To its spatial contraction, and the fallibility of assumptions that modern water infrastructure brought (good, clean, fairly priced) water directly to everyone/anyone. But what was the actual extent of this system? How did it fundamentally alter the spatial dynamics of water gathering? As I will show, this was a topic of perennial discussion and discord in urban Egypt.

The Contraction of Water

It is useful to remember that the public water landscape prior to corporate taps began at the Nile, its canals, the sabil or the well. These were all essentially free, and several options were available in any single neighborhood, interspersed at multiple key junctures creating an accessible, even convenient water landscape. The water carrier of course enabled this landscape to function even more efficiently. This was not the case with the modern water landscape of underground pipes and taps, which prioritized private indoor plumbing rather than free public access. This resulted in a marked contraction of the public water landscape. The number of public water resources decreased significantly, creating the situation of more demand for a single tap.

A close look at the municipal map of Cairo from the 1913 survey revised during the 1930s illustrates the spatial dimensions of public taps (fig. 1.30). Water fixtures such as public taps are indicated by a circle and an abbreviation (fig. 1.31). Each of these have their own specific name suggesting difference in design, structure, capacity, and perhaps user and

intended purpose. In other sources, the Arabic term most commonly used to indicate potable water structures owned by water companies is *hanafiya* (pl. *hanafiyat)* corresponding with the general and fairly diffuse meaning of the English word "tap." Even if we include all hanafiyat as potential water resources, there are far fewer public locations to access water than in the previous diffuse and informal system.[126] If some structures were restricted to paying customers or specific uses, the constriction is even more significant.

We can see the significance of this morphological change by comparing the 1930s Darb al-Ahmar to the same area from the 1809 *DE* map. (fig. 1.32). From these maps I estimate that this area in 1800 had about 41 sabils and the Khalig to serve this neighborhood. It is likely that most in the neighborhood consumed their water either directly or indirectly from this channel. Many of the mosques, such as the Mosque of al-Mu'ayyad, would also have included sabils. All the mosques (about thirty-two indicated) would have included water for washing prior to prayer. If even half of these provided potable water the amount of water resources increases by 11, or well over 50 total. It is also important to remember that this neighborhood would also have included many portable zirs and itinerant water sellers, providing additional opportunities to obtain small amounts of water as needed. Nevertheless, it is possible that at any one time, water options varied for any specific individual, and that some options were better than others for particular uses.

[126] After a close look at these maps, I posit that fire hydrant were likely the only fixtures with a specific limited use. Nineteenth-century fire hydrants did not have taps that could be easily opened, similar to those in use today. For more on types of water fixtures and devices that were available on the global market, see: M.N. Baker, *The Manual of American Water-Works* (New York: Engineering News Publishing Co, 1890); John Goodell, *Water-Works for Small Cities and Towns* (New York: The Engineering Record, 1899).

In the early 1930s the amount of sabils was reduced to eight in this portion of Darb al-Ahmar. There were 16 water company taps. This is a net reduction of 26 water resources from 1800. Some of the larger mosques continued to include sabils, although these would likely have dispensed water company water paid through the endowment in order to do so.[127] In this case, we can add perhaps another 12, bringing the number of possible sites to obtain a drink of water to about 36.

There are other limitations. Sabils did not provide large amounts of water, but a cup or two to the individual to manage their thirst. For large amounts of water in 1800, people would have resorted to the Khalig or the Nile, either by their own steam or by paying a water carrier. Cairo's main free water source, the Khalig, had been closed around 1899. In the municipal map it has been replaced with a major road, Shari' Khalig al-Masri, with a tram line. Thus, for the resident of Darb al-Ahmar, a public tap or indoor plumbing would be necessary for any other task including cooking and cleaning. If a person was poor and could not pay for water, their options were further reduced.

If we assume that taps labeled as public (PWT, Public Water Tap) were most likely to offer free service, the number of options indicated on the map is five total. Moreover, Cairo's population had exploded over this time. In 1800 Cairo was estimated to have a population around 300,000 at most, and by 1907 the population swelled to over 600,000. By 1937 the population had increased a good deal more, to over 1.3 million people. The number of people increased in the old city even as the limits of the city expanded. As the amount of

[127] There is evidence in reports on the 1895 cholera epidemics that mosques could be closed if their water system was considered unsanitary. One of the standard upgrades recommended was the installation of taps rather than having open basins full of water. Municipalité d'Alexandrie, *Lois, décrets, arrêtés et règlements intéressant la municipalité d'Alexandrie*, vol 2 (Alexandria, Egypt: Imprimerie Générale A Mourès & Cie, 1906), 11.

public water resources decreased, any single tap was serving considerably more people. A 1918 map of the population density of Cairo shows the southcentral portion of Darb al-Ahmar roughly synonymous to my map selections in figures 1.13 and 1.30 had at least 16,000 people (fig. 1.33).[128]

The location of these taps is also significant. Some seemed to mimic previous water distribution patterns and are located near sabils and mosques. Just to the east of Midan Bab al-Khalq at the intersection of Shari‘ Taht al-Rab‘ and Shari‘ al-Sharqawi are two sabils, a standpipe and a fire hydrant (fig. 1.34). Elsewhere taps are clustered around public squares or the junctures of major streets. At the public square of Midan Bab al-Khalq, there are three water fixtures indicated, a standpipe, a tap, and a fire hydrant (fig. 1.35). Midan Bab al-Khalq abuts Shari‘ Khalig al-Masri, a reminder of the loss of that canal. Most taps were easily several hundred meters removed from living spaces tucked into cul-de-sacs, a characteristic morphological feature of the old city of Cairo. A walk to any tap might be 1000 meters or more, to a public tap perhaps double (fig. 1.36). As gathering water was limited to a few locations, queues along the Khalig that once were unnecessary became a routine logistical challenge.

A stereograph titled “Egyptian Water Carrier on the Streets of Cairo” shows an example of such a landscape. A woman with a small pot on her head and a baby in her arms stands in the foreground (fig. 1.8., 1.37). A busy intersection forms the background, carts with goods pass, a group of women carrying metal water containers on their heads walk to

[128] For this I am estimating by counting the dots in the map. By 1927 the entire district of Darb al-Ahmar had over 60,000 people. For a detailed discussion of growth trends in Cairo, see: André Raymond, *Cairo*, trans. Willard Wood (Cambridge: Harvard University Press, 2000), 308-338.

her left, and a public tap with attendant sits in the middle ground. In front of the tap, a donkey drinks water from a wide basin. The buildings in the background are largely nineteenth and twentieth century constructions.[129] Informal housing (*ishish*) dot the roofline. A gas or electric lamp sits in the right middle ground in front of some roofless, crumbling one-story buildings. The wide avenue suggests the camera sits at the intersection of a widened modern boulevard, such as Muhammad Ali Street, which transected the length of the city. But beyond that, this photograph could depict any number of different neighborhoods in Cairo, all of which had similarly layered, partially finished, bustling built environments.[130] This photograph shows taps and the people who use them in public spaces. Part and parcel of everyday modern Cairene existence.

The contraction of water resources resulted in a compression of people and their water-carrying accoutrement in the middle of busy streets. In one stereograph there is a long line for a tap in front of the funerary complex to the side of the sixteenth-century funerary complex of Khayrbak in Bab al-Wazir at the southeastern edge of Darb al-Ahmar (fig.

[129] It is outside the scope of this chapter to compare eighteenth and nineteenth century architecture. There have been some good surveys on this topic for the city of Alexandria, and some case studies on Cairo. By and large, the details of the architecture industry in nineteenth-century urban Egypt are understudied, especially in comparison to similarly sized cities in Europe and the US. The focus remains largely on European and architect-designed buildings, vernacular architecture is little discussed. See: Zeyad El Sayad and Dina S. Taha, *Architectural Guide Alexandria* (Berlin: DOM Publishers, 2021); Mercedes. Volait, *Le Caire-Alexandrie Architectures Européennes, 1850-1950* (Le Caire: Centre d'études et de documentation économique, juridique et sociale, Institut français d'archéologie orientale, 2001); Mohamed Elshahed and Mercedes Volait, *Cairo since 1900: An Architectural Guide* (Cairo: The American University in Cairo Press, 2020).

[130] Dell Upton has argued that one of the key experiences of modern growing American cities was the heterogenous built environment that was simultaneously in ruin and full of new buildings. See: Dell Upton, *Another City: Urban Life and Urban Spaces in the New American Republic* (New Haven: Yale University Press, 2008), especially part I.

1.38).[131] The crowd is thick, but few goatskin sacks or pots are visible, suggesting many are in line for a drink. The photograph is a curious blend of staged and candid. It would seem the photographer has asked the people on the street to pause and look at the camera, which captures the scene from a bird's eye view. No one budges from their place in line at the tap, however. Interestingly, this complex also had a sabil located up the street from the tap (fig. 1.39). In an earlier photograph by Jean-Pascal Sébah of the same street, the screen of the sabil behind the mausoleum is just visible. Was there a line waiting at its screen as well, or had it been closed?

Even as taps (slowly) spread throughout Egypt's urban streets, no one was lining up to thank the government or the water companies. The installation of taps in a neighborhood was often announced in public newspapers.[132] Articles and brief notices in *al-Ahram* criticized tap installation logistics and policies. The government and the company were rebuked for filling wells before securing convenient taps for the poor.[133] A notice from October 12, 1891, condemned the government for closing wells in the neighborhood of al-Damardash to the northwest of Darb al-Ahmar, and simultaneously directing those residents to use the taps of Abdin, a good kilometer away for many.[134] This had the additional effect

[131] The stereo print is mislabeled as the mosque of Qaytbay. The domes of both are quite similar, and some aspects of the arrangement, but the site plans are very different, as is the urban fabric around them. The funerary complex of Qaytbay is located in the northern cemetery.

[132] There are many examples of such notices in *al-Ahram* especially. For one example: *al-Ahram* (May 15, 1895): 2 in which the author describes the company and government opening fifteen taps in the city for the poor. It is not necessarily clear how this classification is determined or publicized. See also: *al-Ahram* (January 20, 1896): 3 in which the author also mentions the building of taps as a response to the closing of canals. The timing suggests a cholera prevention effort, although cholera is not mentioned specifically.

[133] *Al-Ahram*, (August 26, 1890): 3.

[134] *Al-Ahram* (October 12, 1891): 2.

of angering the inhabitants of the wealthy Abdin neighborhood, who countered with a demand for a tap restricted to their use alone. Not only does this article attest to the myriad issues at play in tap logistics, but also to the fact that people of all classes used public taps.

These criticisms only increased in quantity and fervor over time. Issues of limited access perceptible in the maps discussed above are referred to frequently in snippets on petitions, formal complaints, and similar actions. In 1925, Darb al-Ahmar residents demanded more taps as those in the neighborhood were too few and far away.[135] A similar complaint was issued by residents of Old Cairo in 1927.[136] In that same year, as part of a series on foreign companies in Cairo, *al-Ahram* condemned the tiered-price system of the water company, their relationship with the government, and the fact that free taps were practically useless to the poor because their hours of operation were so limited:[137]

> But these taps, as it has been for a long time, are too few in number for the residents of Cairo, especially since they are open for only a very limited time [per day]. And so, an extremely large crowd gathers. It is necessary for the government and the water company to increase these taps and keep them open throughout the day for the poor to gather water…[138]

On March 9, 1932, the Department of Public Works responded to a wave of such demands. They stated that the water company was under no obligation to provide more charitable taps, but that they (the government and water company) had negotiated a reduced price for anyone who paid for water from the poor's taps. The article noted that the number

[135] *Al-Ahram* (August 21, 1925): 5.

[136] *Al-Ahram* (January 22, 1927): 5.

[137] *Al-Ahram* (August 19, 1927): 4.

[138] Ibid.

of free taps had increased from 38 in 1922 to 61 in 1931.[139] *Al-Ahram* had published rumors previously that the company taps sent unfiltered water to poor neighborhoods, so it is possible that such an offer was doubly disingenuous, demanding people pay for untreated Nile water without revealing it as such.[140]

What is clear about these allegations, in tandem with the maps and photographs, is that modern public taps were by no means meeting the needs of the Cairene public. An outing for water demanded money, distance, and time – pay to the water company, walk to the tap, and a good long wait in line. However, lines were not limited to stationary public taps. Water carriers again filled an infrastructure gap and became mobile distributors, providing water to people in underserved areas. In one stereograph, a water carrier with a wooden barrel pulled by a donkey has a significant line for his water (fig. 1.40). Some of the queuers look at the camera, but a good number of them look towards the cart, a subtle gesture of impatience. Indeed, the misuse and lack of taps produced another type of waiting, according to a rather colorful description of a conundrum experienced by the poor in one neighborhood in Cairo:

> It has come to us that the people of Ghayt al-Adah filed a petition complaining about a business that was taking water from the taps designated for the poor…leaving them but a bowlful or two among them. They are left with the choice of [patronizing] a possibly dishonest water carrier or waiting in their houses subsisting on wells, which provide just enough for them.[141]

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[139] *Al-Ahram* (March 9, 1932): 2. It would be interesting to compare this number to the representation of taps on the municipal maps discussed above. Such a task was outside the scope of this project.

[140] *Al-Ahram* (August 24, 1907): 1-2.

[141] *Al-Mu'ayyad* (September 2, 1902): 3. The publishing of this article coincided with the 1902 cholera epidemic. Ghayt al-Adah is just to the west of Darb al-Ahmar, on the west side of Shari' Khalig al-Masri on the 1930s plans.

This example represents water vendors as suspect, repeating some of the favored British colonial rhetoric on water carriers as untrustworthy and disruptive. The only possible remedy is for the government and the water company to take responsibility and provide for the poor. There is no room for alternatives. This is an example of a subtle shift in rhetoric and use patterns that claimed (clean, free, accessible) *tap* water as a right rather than a privilege. Thus, the public is demanding the extension of the convenience and safety of piped filtered water, within the bounds of the traditional Cairene water provision system in which free water had always been a right, and a duty for leaders to provide.

Conclusion

Urbanists have argued that infrastructure can seem to show itself best when it breaks, that modern infrastructure specifically is defined by its relative invisibility.[142] This observation operates in a specific way in nineteenth-century cities in the colonized world, during which the process of making invisible and inaccessible something that was previously open and free was not resolved. The reasons for removing potable water out of reach seemed clear. Open water and visible waste could be contaminated, so underground pipes were touted as remedies across the world, including in Egypt.[143] Administrators such

[142] Stephen Graham gives a precise summary of this literature. When something becomes ordinary in design, it is called "black-boxing." Once infrastructure disappears in this manner it is relegated to a different rhetorical (underground) space…until it breaks down. See Graham, Introduction, *Disrupted Cities: When Infrastructure Fails.*

[143] The bibliography on this subject continues to grow. Some recent examples: Ufuk Adak, "Water, Sewage and Sanitation: Infrastructure Projects and Public Health in Izmir in the Late Ottoman Empire," *Journal of Balkan and Near Eastern Studies* 24, no. 2 (2022): 263–84; Michael Christopher Low, "Ottoman Infrastructures of the Saudi Hydro-State: The Technopolitics of Pilgrimage and Potable Water in the Hijaz," *Comparative Studies in Society and History* 57, no. 4 (October 2015): 942–74; Lionel Frost, "Water Technology and the Urban Environment: Water, Sewerage, and Disease in San Francisco and Melbourne before 1920," *Journal of Urban History* 46, no. 1 (January 1, 2020): 15–32.

as Piot promised that another benefit to this process was that the *labor* of water would also be hidden from view. But the archive does not support this narrative. Rather it indicates a significant compromise between labor, mechanics, logistics, and the visible and hidden aspects of infrastructure. This is poignantly brought forward by looking at the water carrier and the task of water carrying through a combination of maps, photographs, news, colonial reports, among other written sources. Within these we see a complex web of self-interested actors, a jumble of capital, labor, and those simply trying to make do, amassing and confronting each other in the space of the public tap.

The colonial government and some members of the Egyptian elite aimed to blame water carriers for some of this system's disfunction. But this was an illusion, and a distraction, as *anyone* might be a water carrier. To find the water carrier in urban Egypt, one must look to the action performed, rather than any sort of professional identifier as that mattered little in the shared experience of waiting at the tap. This detail in my research matters because it disrupts two aspects of infrastructural studies that we often take for granted. That infrastructure is networks, and that it is a series of objects on which these networks move. It is these things certainly, but it also their conjunction, and the labor of human bodies that made, enabled, and remade it. The labor of bodies cannot be removed from the history of modern water.

At the end of the nineteenth century, Piot and his peers envisioned a city in which the water carrier was already a relic. An unfortunate stopgap measure fated to disappear as miles of underground pipes for both potable water and sewage continued their unrelenting march. But like other discourses of modernity, this rhetoric was predicated on an imagined, comprehensive, even equitable allocation of resources that simply did not exist. From the

day the first water works opened, it required human labor and human infrastructure to function. This human labor was made visible at the taps, as were the limits of pipes, pumps, and filters, through the spatial and inextricably modern practice of waiting in line. Shousha was not the only one in line at the tap in the beginning of *al-Saqqa Mat*. He joined a long line of impatient women and men, holding cups, pots, and other containers waiting for their turn.

Chapter Two. Empty Channels and Muddy Wells: Dismantling the Architecture of Inundation at Cairo

Introduction

A five-album photograph and scrap book collection digitized by Persée and owned by the Bibliothèque nationale de France and the Institut Français d'Archéologie Orientale includes a diverse array of images of urban Cairo from the 1850s to the 1940s.[144] There are photographs by Ottoman photographers such as Gabriel Legekian and the Abdullah Frères, postcards, and magazine clippings from numerous popular Arabic-language magazines such as *al-Lata'if al-Musawwara* and *Kul al-Shai' wa al-Dunya*.[145] In one of these albums, there are over a dozen photographs taken around 1895 of Cairo's main canal, the Khalig al-Masri, both full and empty of water (figs. 2.1-2.5).

Since at least the eighth century until its closing at the end of the nineteenth, this canal channeled the Nile floodwaters into the city of Cairo.[146] Unlike most rivers, the Nile has a measured and predictable flood cycle. Fed by monsoon rains in central Africa, the Nile

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[144] "Albums iconographiques du Caire moderne," *Albums iconographiques du Caire moderne*, accessed May 17, 2022, https://athar.persee.fr/collection/icocm. An interdisciplinary research team undertook a project on these albums that resulted in a website with short articles on topics related to the photographs, a digital mapping project, and the digitization of the albums as part of the Athar collection in Persée. For more information on the project, see: "CAIRMOD CollEx - Persée," accessed July 16, 2022, https://www.collexpersee.eu/projet/cairmod/.

[145] *Kull al-Shay' wa al-Dunya* ran from 1932-1937. *Al-Lata'if al-Musawwara* ran from 1915-1937. Both were general interest magazines that had many images, including advertisements. For a chronology, see the University of Bonn's Translatio Project, accessed July 18, 2022: https://bit.ly/3PFmDXe.

[146] Nineteenth-century accounts of the canal are often a combination of myth and history. Some historians date the first canal along the Khalig's course to the Roman Emperor Trajan. The nineteenth-century path of the canal likely dated to the eighth century, part of the numerous infrastructure projects of Amr ibn al-As. For an account of this history, see: Abu-Lughod, *Cairo*, 83-85.

at Cairo began to rise slowly in June, peak in October, and fall thereafter. Canals such as the Khalig could be opened at about the same time every year to enable basin irrigation and the cultivation of winter crops. During the nineteenth century, the Khalig was opened in about mid-August with great ceremony when the water reached the 16-cubit mark on the Roda Nilometer.[147]

In this chapter, I will consider the circumstances and the stakes of the permanent closing of Khalig al-Masri. Almost invariably, sources maintain that it was closed for the sake of public health.[148] There are various dates for this event, ranging from early 1897 to late 1899. Among other challenges, overdue maintenance likely caused the Khalig's water to slow, allowing for the steady unchecked accumulation of debris, silt, and waste. Outside of the flood season, the canal bed experienced periods of prolonged emptiness.[149] Certainly it had been closed temporarily in 1895 after officials linked an outbreak of cholera to people living in homes along its shores and swimming in its waters. It is not in question that untreated open water can contribute to disease. Rather, I argue that the public health justification for such a large project that fundamentally altered the water landscape of Cairo had implications and consequences beyond the prevention of disease.[150] How did the water

[147] A cubit is about a half a meter. There are many accounts of this history and Nile hydrology. For an approachable comprehensive survey, see: Rushdi Said, *The River Nile: Geology, Hydrology, and Utilization* (Oxford: Pergamon, 1993).

[148] A recent *al-Ahram* article notes that Khedive Abbas Hilmi ordered the Khalig closed in February of 1897. All sources seem to indicate that the decision was not made public, but rather done as surreptitiously as such a large project would allow. I will discuss this in more detail below. For its closing at the order of Abbas Hilmi, see: "Thakir al-Tarikh: Ma zal al-nil yajri..."wafa' al-nahar al-mubarak" hadiran fi al-adad al-awwal min *al-Ahram*," *Bawaba al-Ahram*, August 5, 2021, https://gate.ahram.org.eg/News/2885885.aspx.

[149] Ali Mubarak, *al-Khitat*, vol 18, 124; Alleaume, "Hygiène Publique,"151-182.

[150] The best recent studies on water infrastructure in Cairo during this time have focused on sewage removal schemes. See Shehab Ismail, "Engineering Metropolis. Scholarship on

landscape of Cairo change with the closing of the Khalig? Who did it effect, why, and in what ways? I will show that the closure of the Khalig not only changed the potable water logistics of Cairo, but also reoriented the entire cultural and ceremonial water landscape of the city.

As I mentioned in my first chapter, the Khalig al-Masri provided water for many Cairenes for free, whether directly collecting from its banks or via a water carrier, fountain or cistern. Upon its closing the logistics of potable water access irrevocably changed. A steady supply of free water was no longer available, a street with a tram took its place. In addition, the Khalig was a profound cultural and ceremonial center for the city's residents. It was a long public water space to gather and socialize, to swim, to celebrate. With its closing the cultural and ceremonial importance of water did not disappear, but shifted to the Nile proper, removed from the city center to its periphery.[151] New stories of water and the flood emerged, and the Khalig's place in the mythic history of the Nile and Cairo faded.

The Nilometer, located at the tip of the island of Roda in the middle of the Nile to the east of Cairo, is an important part of this story (figs. 2.22-2.25). The Roda Nilometer and the Khalig form a critical axis in my analysis. Both monuments are inextricably linked to the ceremony of the Rise of the Nile and the Opening of the Canal.[152] Both were essential

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uneven infrastructure access in contemporary Cairo has focused on potable water access. See: Deena Khalil, "The Flexible Governance of Water in Cairo's Informal Areas," *Water* 11, no. 8 (2019): 1644; Tessa Farmer, "Willing to Pay: Competing Paradigms about Resistance to Paying for Water Services in Cairo, Egypt," *Middle East Law and Governance* 9, no. 1 (2017): 3–19.

[151] It should be noted that property along the Nile shores and the islands is some of the most desirable and expensive in the city. The most expensive hotels are located on the Nile Corniche and on Zamalek, the island called Gezira (literally island in Arabic) in the Ottoman period.

[152] There is no stable title for this ceremony in the late nineteenth-century Arabic texts that I consulted. It might be called simply "wafa' al-Nil al-mubarak," (rise of the blessed

structures of Cairene Nile flood management and history but suffered divergent fates. The Khalig was closed, filled in, and remains as a trace under wide, busy Port Said Street. The Nilometer, on the other hand, was drained and preserved as a key monument in the Arab-Islamic architectural heritage of Cairo.[153] The preservation of the latter complicates the closure of the former. One was worth saving, deemed valuable to the cultural heritage and hydrological history of Cairo, and the other was not. However, even as the Khalig al-Masri was not preserved, its path remained an infrastructure of bodies, labor, and community. After it was transformed into a street with a tramline in the early twentieth century, it was used to resist and to strike. This history contradicts officials' claim that infrastructure was primarily functional, fungible, and devoid of meaning.

After providing a framework for my analysis, I will discuss the lived Khalig, the ceremony of the Rise of the Nile, and the seasonal water landscape of Cairo. Second, I will look at the rhetoric of a specific type of emptiness as pivotal in claiming it as a danger to public health. From there, I reorient the meaning of the closing of the canal from "public health" to the fraught project of urban water infrastructure modernization. Entangled public controversies about the role of the Khalig in potable water distribution, public sociability, and the incursion of dubious corporate entities (and the colonial government) into this space form a part of this reassessment. Next, I consider how the fate of the Nilometer highlights

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Nile) or sometimes "wafa' al-Nil wa qita' al-khalig" (rise of the Nile and opening/cutting of the canal).

[153] The Nilometer's classification as Islamic or otherwise is another issue, but at the time of its preservation it was generally referred to in French and English texts as Arab or Muslim. Texts in Arabic do not classify it this way really at all, but rather as ruin or trace (athar) dating to the time of the first caliphs in Cairo. Paula Sanders discusses how Mamluk architecture becomes identified as Arab and Islamic in: Sanders, *Creating Medieval Cairo,* especially chapter one.

the critical choices made to close the Khalig. Historic preservation entities in Cairo formed specific criteria to rank and assess landscapes and structures and present them as neutral monuments, rather than social spaces. For both the Khalig and the Nilometer, a logistical and rhetorical dismantling of the social practice of inundation was necessary to make them monuments that could be transformed. Finally, I briefly discuss the afterlife of the Khalig as a negation of attempts to dismantle and neutralize it – as it became a site of new infrastructural communities of everyday movement, labor, and resistance.

Frame

Shehab Ismail has recently shown that Cairo's modernization under British occupation—including the installation and commercialization of potable water pipes and sewers—was linked to public health discourse that began to see openly-accessible city water spaces, such as canals, as rife with disease.[154] The Khalig formed an important part of this rhetorical and policy turn, as public health reports, popular publications, and the public works archive emphasized the canal as a danger to public health. Ismail has shown that in the 1890s especially, regulatory efforts to preemptively address epidemic disease were essential in changing the water landscape, even as these processes were slow, uneven, and often blatantly racist and classist. These efforts formed part of the global process of creating a modern sanitary city, a bacteriological model of framing, building, and understanding urban morphology.[155]

As discussed in chapter one, urban water infrastructure modernization in part aimed to replace traditional, decentralized, and locally governed water systems with centralized

[154] Ismail, "Engineering Metropolis."

[155] Matthew Gandy, "The Bacteriological City and Its Discontents," *Historical Geography* 34 (2006): 14–25.

corporate entities. This was a global urban process during the nineteenth century. Scholarship on other cities such as Istanbul and Bengaluru has shown that capitalism drove these changes, even as public health was frequently rhetorically employed to bolster public support and delay or manipulate decision making and implementation.[156] In Bengaluru, for example, the British colonial view that local lakes were a source of contamination led to neglect, and eventually draining and transformation that profoundly disrupted the city's ecology, and perpetuated uneven access to potable water.[157] Likewise in Cairo and Alexandria, European utilities and transportation companies took advantage of the currency of this rhetoric to condemn water landscapes that were multifunctional, such as the Khalig. Corporations needed to emphasize the danger of mixed-use water spaces to persuade the government and certain portions of the population to adapt their imagined and practical relationship to water. Modern infrastructure isolated and reduced the importance of the social and ceremonial.

In this sense, the critical process of dismantling helps frame the transformation of the Khalig. Dismantling was easier if the Khalig was considered dangerous, if its contemporary cultural meaning was demoted, neutralized by its association with improper sanitation.[158] This process of neutralization is part and parcel of the modern practice of historic

[156] Hita Unnikrishnan et al., "Water Governance and the Colonial Urban Project: The Dharmambudhi Lake in Bengaluru, India," *Urban Geography* 42, no. 3 (2021): 263–88; Noyan Dinçkal, "Reluctant Modernization: The Cultural Dynamics of Water Supply in Istanbul, 1885–1950," *Technology and Culture* 49, no. 3 (2008): 675–700.

[157] Unnikrishnan, et al., "Water Governance and the Colonial Urban Project."

[158] I am particularly intrigued by Adi Meyerovitch's explanation of the process of neutralizing Palestinian monuments through neglect and decontextualization: Adi Meyerovitch, "Kabri Aqueduct: A Neutralized Monument," *PLATFORM*, accessed May 17, 2022, https://www.platformspace.net/home/kabri-aqueduct-a-neutralized-monument.

preservation. Cairene historic preservation emerged in the 1880s with the formation of the Comité de la Conservation de l'Art Arabe, an institution within the Ministry of Waqf. This Comité and its supporters laid the groundwork for a set of ideals and practices that favored a Mamluk aesthetic divorced from Ottoman and contemporary everyday practices.[159] Opinions across the Comité were not uniform, but the choices the committee made ultimately displaced practice in favor of aesthetics. This co-existent discourse is entangled with the rhetoric of public health that characterized the mere visual presence of dirt, mud, and water as unsanitary.[160]

I use the album photographs of the Khalig as an opening to reconsider the narrative of its closing. As it is clear the canal was not empty, whether water was passing through it or not. I understand these photographs take part in a visual history and rhetoric that romanticizes and orientalizes this channel, yet they have value as objects that challenge the dismantling of the Khalig as *an event* of public health.[161] European and some Egyptian public health officials suggested that the absence of water in the Khalig was synonymous with a certain type of emptiness. This emptiness was coded as misused/unused land, and thus a space that could potentially be employed for other, more productive purposes. Yet

[159] Sanders, *Creating Medieval Cairo,* especially chapter one.

[160] Vision and scent are intertwined significantly in the judgment of a city as sanitary or otherwise, especially in colonial official reports. There is less strident reference to the bad smells of the Khalig in the popular Arabic sources that I have consulted, but sometimes such statements do occur. There have been some studies on the cultural history of smell that have explored how this framed modern sensibilities, including: Alain Corbin, *The Foul and the Fragrant: Odor and the French Social Imagination* (Cambridge: Harvard University Press, 1986). For nineteenth-century Egypt, see: Fahmy, *In Quest of Justice*, especially chapter three.

[161] See Ali Behdad on landscape and urban photography and its confluence with Orientalist discourse: Behdad, *Camera Orientalis.*

this narrow definition of emptiness as absent water is challenged by photographs of a thoroughly inhabited ecosystem. Egyptian intellectual representations of the khalig preserve a more complex version of its history and value to the city of Cairo. These show that dismantling the Khalig disrupted more than methods of water access. It reoriented entire modes of inhabiting urban space, of recognizing and utilizing infrastructure.

Finally, it is essential to emphasize that the landscape of Cairo prior to the interventions described in this chapter and throughout this dissertation, such as the draining and filling of the Khalig, was a land of the Nile, its streams, canals, seasonal lakes, ponds, and marshy foreshores. The Nile flood cycle created a constant ebb and flow of inundated landscapes (see fig. 1.11). Parts of Cairo were in and under water and surrounded by marshland for months out of the year, people adapted to and celebrated the advantages of this auspicious ecology, even as its predictability could sometimes falter. Indeed, the shores of the Nile shifted to the west over time, providing new ports and the opportunity to build new suburbs. The old city of Cairo, the Fatimid palace city of al-Qahirah, was constructed some distance to the east of the Nile, connected to it by the Khalig which forms the subject of this chapter. The Khalig can be considered fundamentally as an extension of that body of water, with just as much logistical and ceremonial importance as the river itself.[162]

[162] Three works provide excellent overviews on the history of the Nile that I have used for my research. The first: Rushdi Said, *The River Nile: Geology, Hydrology, and Utilization* (Oxford: Pergamon, 1993), provides an overview of the river from a scientific, historical and cultural perspective before recorded history until the twentieth century. The second: Janet Abu-Lughod, *Cairo: 1001 Years of the City Victorious* (Princeton: Princeton University Press, 1971) provides specific information on the Nile and its importance to and impact on the city of Cairo. The third: Alan Mikhail, *Nature and Empire in Ottoman Egypt: An Environmental History*, (Cambridge: Cambridge University Press, 2011), is a critical examination of human intervention in the ecology of the Nile during the Ottoman period, an essential historiographical turn.

The Lived Khalig and Landscapes of Inundation

Ali Pasha Mubarak, a nineteenth-century Egyptian polymath and career government official, dedicated the entirety of volume 18 in his 20-volume *al-Khitat al-Tawfiqiya al-Jadida* (Tawfiq's New Plan*)* published in 1889 to the Nile, its history, and its architecture at Cairo.[163] Within this volume he devotes about a page and a half to the Khalig. The final paragraph on its modern situation concludes:

> Every year, as it has been for ages, the people return to the Khalig for reckless amusement. Because of this they fret and their hearts break at the thought of the filling of the canal…It is preferable to fill it with water so that this piece of our heritage and its munificence remains for those who come after. For it is a trace (*athar*) of Egypt from four thousand years ago.[164]

In this paragraph Ali Mubarak is referencing the ceremony of inundation that brought people from all over the city to celebrate a sufficient flood with the opening of the canal. The Khalig was inextricably linked to the seasonal Nile flood in memory and practice. Ali Mubarak was a pragmatic urban reformer who embraced modern city planning.[165] His opinion on retaining the Khalig for posterity is meaningful in this respect. He understood the significance of the Khalig as a monument, as a functioning canal, and as a ceremonial space.[166]

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[163] Ali Mubarak, *al-Khitat*.

[164] Ibid, 124.

[165] There are several studies of Ali Mubarak's role in Cairene city planning and as a reformer. Within the context of Egyptian history writing, see: Yoav Di-Capua, *Gatekeepers of the Arab Past: Historians and History Writing in Twentieth-Century Egypt* (Berkeley: University of California Press, 2009). For his role in Cairene city planning, see essays by Nasser Rabbat and Nezar AlSayyad in: Nezar AlSayyad, Irene A. Bierman, and Nasser O. Rabbat, eds., *Making Cairo Medieval* (Lanham: Lexington Books, 2005).

[166] Ali Mubarak did not shy away from removing monuments to create parks, avenues, or to facilitate the flow of people and goods. For example, as head of the Comité de la Conservation de l'Art Arabe in 1883, he recommended the removal of a sabil to ease traffic near Bab Zuwayla. Other members of the committee did not agree. Zeki Mohamed, Franz

The people of Cairo looked forward to the flood with some anticipation. Newspaper reporting on the flood melded folklore and logistics. A dedicated section in daily newspapers, such as *al-Ahram* and *al-Mu'ayyad* included Nile statistics and historical measurements (fig. 2.6). The past records were important, as Nile flood levels often heralded multi-year patterns. A lower-than-average Nile often anticipated several years of the same and was treated with significant concern.[167] At the beginning of summer these notices became more frequent. Newspapers and magazines sometimes published commemorative articles on the ceremony of Nile inundation (The Rise of the Nile and Opening of the Canal), or related ceremonies such as the Night of the Drop (*Laylat al-Nuqta*), that took place on July 17 every year. According to nineteenth-century accounts, this auspicious popular celebration marked the beginning of the flood, as myth held that a magical drop of water fell from heaven at this date to start the Nile's rise.[168] In other texts, the drop is also associated with the Pharaonic legend of the tears of Isis, who wept at the death of her husband Osiris, making the Nile rise with her tears.[169] In the June 1887 issue of *al-Qahira al-Hurra*, a daily Cairene newspaper, a brief notice marks the celebration, and connects it to the rise of the Nile: "Tomorrow night marks Laylat al-Nuqta, and we hope that this year the Nile's rise will be sufficient."[170]

Julius, Grand Pierre, Rogers Edward Thomas. "Procès-verbal n°2," in: *Comité de Conservation des Monuments de l'Art Arabe*. Fascicule 1, exercice 1882-1883, 1892. pp. 14-17: www.persee.fr/doc/ccmaa_1110-6824_1892_num_1882_1_7620.

[167] Rushdi Said, *The River Nile*, especially part II chapter two.

[168] Ibid, 97.

[169] This legend is repeated frequently in articles on the Rise of the Nile. For one example: "Indama Yatazu' al-Ard Masr!" *al-Ahram* (August 8, 1957): 8.

[170] *Al-Qahira al-Hurra* (June 16, 1887), 2. This newspaper apparently ran daily for about three years. The word "sufficient" is drawn out in a longer literary construction in Arabic that in this context emphasizes the importance of just the right amount of rise (no less, no

Flood records formed part of a new genre of scientific and historical literature on the Nile. Ali Mubarak pulled together over a thousand year of Roda Nilometer measurements of the Nile from a variety of sources for volume 18.[171] These records of Nile measurements include its minima, maxima, and sometimes the level at which the Khalig was opened. Ali Mubarak's record also includes historical notes for certain years taken from various sources. If the flood was too low or too high, it was greeted with desperate measures. Leadership replaced celebrations with prayers at the mosque next to the Nilometer in a bid to coax the Nile to rise and avoid the famine and civil disarray that sometimes followed. In 1816, the flood was much too high, and "the Nile submerged the summer cotton, maize, sesame and sugar cane, and most gardens. It was a veritable ocean everywhere, many villages were destroyed, as were animals and people."[172]

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more). *Al-Qahira al-Hurra* also included a table of current and historic Nile measurements. Other Arabic-language journals refer to Laylat al-Nuqta in a similar fashion, often in articles on the rise of the Nile. For example: "Wafa' al-Nile wa Nuwruz," *al-Muqtataf* 61, 2 (July 1, 1922), 123. Nuwruz is the Persian New Year.

[171] There are a few gaps in the record, which Ali Mubarak discusses. Ancient records from nilometers in Upper Egypt are recorded on tablets and on the walls of the Nilometer at Elephantine. Medieval records of the Roda Nilometer were culled from a variety of historians and geographers, such as al-Maqrizi. Ali Mubarak also uses al-Jabarti's writings for Ottoman events. Several later publications on the Nile also collate sources, most notably Amin Sami, whose 1915 text *Taqwim al-Nil* analyzed Nile statistics in detail. See: Sami, *Taqwim Al-Nil*, vol 1. I have noticed that these texts in general are understudied in the history of the Nile and nineteenth-century water infrastructure modernization, especially Ali Mubarak's work. Considering he was an engineer and played an important role in many public water projects, it is a noticeable gap that his research and data (still) does not appear to garner the same recognition as English engineers such as William Willcocks.

[172] This historical note comes from al-Jabarti, as do the majority of those from the early nineteenth century recorded in Ali Mubarak's and Omar Tousson's compilations of the Nile measurements. Tousson's is a bit more readable as a historical record because of how he formats the records. See Omar Tousson, *Mémoire sur les anciennes branches du Nil* (Le Caire: Impr. de l'Institut français d'archéologie orientale, 1922), 510.

Records for sufficient floods are often formulaic. For the year 1809: "On Friday…wafa' (inundation) took place; the population went to see the Khalig. The canal was opened with the traditional ceremony, in the presence of the Pasha, notables, and the Qadi. There was no land left unirrigated this year."[173] In other years, such as 1882, significant historical events were also recorded with the level of the Nile: "In sha'aban (July) year 1299/1882 the British hit Alexandria and in shawwal (August) of that same year they entered Tell al-Kabir and occupied the Citadel at Cairo (qal'at al-jabal) (fig. 2.7)."[174] Thus records of the Nilometer measurements and the opening of the canal ceremony are invaluable historical sources, and authors such as Ali Mubarak regarded the rise of the Nile as integral to understanding the history of Cairo and Egypt.[175]

Government administrators watched the Nilometer in preparation for inundation. Prior to the transfer of duties to the Public Works Department at the end of the nineteenth century, the Keeper of the Nilometer reported the level to government administrators as it began to rise. The Keeper was required to begin taking daily measurements at the Nilometer once the river began to turn red, indicating the flood was near.[176] Soon after this, the level of the Nile was announced daily in the streets of Cairo by the Shaykh al-Munadi.[177] Sometimes

[173] This is Tousson's translation of al-Jabarti's history. Tousson, *Mémoire du Nil,* 508.

[174] Ali Mubarak, *al-Khitat*, vol 18, 109.

[175] Ali Mubarak organized his records into a seventy seven-page table in volume 18 of *al-Khitat*.

[176] Sahar Ali Hanafi, "Hafl Wafa' al-Nil fi al-Qahira al-Uthmaniya," *Majallat al-Adab wa-l-Ulum al-Insaniya* 62, 1 (October 1, 2006): 569–613, 579. The Keeper of the Nilometer was a specific waqf-endowed position held by members of the same family during the Ottoman period. There is evidence that the Keeper continued to record the measure of the Nilometer after the transference of the role to the Public Works Department and installation of the new Nilometer in 1889. My thanks to Anthony Greco for this information. For this role, see Ali Mubarak, *al-Khitat*, vol 18, 24-26.

[177] Hanafi, "Wafa' al-Nil," 588.

the shaykh was accompanied on his duties by a young man or boy, and the two would call back to each other a series of standard invocations and prayers as they reported the Nile measurements.[178] The Shaykh would also be responsible for notifying the public that *wafa'* had been declared and that the opening of the canal would take place the following day.[179]

The opening of the Khalig and a proper lavish ceremony that established or reestablished the legitimacy of the ruler and the role of the state in levelling taxes followed a successful Nile rise. The people of Cairo and its environs celebrated before and after the formal ceremony with food, drink, and music.[180] On the day before the canal was opened, preparations began for the cutting of the dam at the mouth of the canal at Fum al-Khalig, just to the north of Old Cairo (fig. 2.8). On the Nile side of the dam stood a column of earth. According to nineteenth-century popular sources, this representation (*timthal)* served as a commemoration of the mythic practice of sacrificing a young woman to the Nile to ensure its rise, becoming the "Bride of the Nile." This column was largely depleted by the rising floodwaters prior to the destruction of the dam during the Rise of the Nile celebration.[181]

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[178] Ibid. Edward Lane described the ceremony for the Wafa' al-Nil for 1839 in detail: Lane, *Manners and Customs,* 125-137.

[179] The word wafa' literally translates as loyalty, referencing the reliable pattern of its rise and fall.

[180] Paula Sanders has discussed the importance of this ceremony to the Fatimids, especially in terms of legitimizing their right to rule. Napoleon was also keen on this aspect of the ceremony and attempted to hold an event that rivaled the Fatimid's spectacular performances. See: Paula Sanders, *Ritual, Politics, and the City in Fatimid Cairo* (Albany: State University of New York Press, 1994); *Description de l'Égypte*, vol 1 (Paris: Imprimerie impériale, 1809).

[181] Sources say that after Amr ibn al-As abolished the practice of sacrificing a woman to the Nile. The story of the bride is likely a myth, but a very resilient one repeated often in popular texts. For two examples, see: "Dahia al-Nil," *al-Hilal* 3, 24 (August 15, 1894): 922-925; Ali Mubarak, *al-Khitat*, vol 18, 29-31.

Near Fum al-Khalig, tents and impermanent structures were constructed on the north side of the bank for dignitaries, government officials, and other important people (see figs. 2.8-2.9). On July 27, 1879, Viceroy Tawfiq oversaw the ceremony, a mere three days after his uncle, former Viceroy Ismail, had fled the country. Tawfiq stood at the helm of a large steamer appropriately called "Bride of the Nile" surrounded by his ministers and a group of soldiers (fig. 2.10).[182] When Tawfiq descended from his boat, a royal salute took place, and fireworks began. These "continued incessantly till a late hour."[183]

The Nile, Roda Island, and nearby Old Cairo were crowded with people who gathered to watch the festivities and celebrate through the night. Some boats employed professional musicians to entertain passengers over the course of the ceremony. Two English travelers watched the ceremony from their boat on the Nile and described the boats as "tastefully illuminated with lamps and lanterns…in pearl-like rows of brilliant light, and the gaily dressed passengers, both male and female, were evidently enjoying themselves, listening to music, vocal and instrumental."[184] Celebrations were not limited to the areas directly around Fum al-Khalig. Ali Mubarak describes the atmosphere of Cairo's streets the night before the ceremony as festive and lively: "A night of joy and delight, during which no

[182] As Paula Sanders and others have noted, it would be extremely important for the new ruler to show himself at this ceremony in order to reinforce the stability of his rule and of prosperity in Egypt. The cutting of the canal in Tawfiq's first year took place on August 3. Omar Tousson and Ali Mubarak both discuss the importance of the ceremony for affirming leadership, and both discuss the examples of the Fatimids and Napoleon at length. For Tousson's notation on Tawfiq's ascension, see: Tousson, *Memoire du Nil*, Vol 2: "In this year, Khedive Ismail Pasha left Egypt on 6 Ragab 1296 Hijri (27 July 1879). S.A. Muhammad Pasha Tawfiq succeeded him 7 Ragab of the same year."

[183] Edward Thomas Rogers, et al, "The Rising of the Nile and Opening of the Canal of Cairo," *The Art Journal* 6 (1880): 289.

[184] Ibid, 290.

one slept across the city, from downtown to Old Cairo to Bulaq and into the suburbs…you hear music and melody from most houses overlooking the Khalig."[185]

The next morning, on Viceroy Tawfiq's signal, workers began cutting the dam with picks and shovels.[186] The pressure of the Nile helped the workers as they hacked away at the earth. As water flowed into the Khalig, people began to jump in and swim and play in the flood water. Tawfiq came forward and threw money first to the workers, and then into the crowd. Sometime later the chief judge sealed the document proclaiming sufficient rise of the Nile and he, the Viceroy, and other officials departed on Tawfiq's steamer. Swimming, socializing, music, food, and games continued around the canal throughout the day. The Egyptian feminist activist and author Huda Sha'arawi recalls the festival of the Rise of the Nile in her memoirs as a special time for her and her sibling to go out and enjoy the festivities: "Sometimes we stayed the night on a boat…and the Nile that night was [covered] in golden lights, and boats adorned with flags, decorations, and colorful lamps."[187] Ali Mubarak describes the people of Cairo descending on Fum al-Khalig to watch the dam open and the flood waters cleanse the canal.[188]

This celebration also heralded a season in the inundated city. Socializing along the canal was popular, as an article in *al-Hilal* noted in 1893: "This canal is an incredible garden for the people of Cairo and its suburbs…the people sit and take in its views, enjoying the

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[185] Ali Mubarak, *al-Khitat*, vol 18, 35.

[186] According to Lane, the workers who broke the dam were gravediggers by trade, alternating between Jews and Muslims each year. The latter was paid more if the cutting work fell on a Saturday. Lane, *Manners and Customs*, 134.

[187]Huda Sha'rawi, *Mudhakkirat Huda Sha'rawi* (al-Qahira: Dar al-Tanwir lil-Tiba'a wa-l-Nashr wa-al-Tawzi', 2013), 37.

[188] Ali Mubarak, *al-Khitat*, vol 18, 34-35.

sites and the sounds…" People also swam and had parties in boats in Cairo's seasonal lakes. Prior to its conversion into a modern public park, Azbakiya was the largest of these seasonal lakes and travelers accounts attest to the astonishing transformation of the flood waters, turning the basin from azure, to green to gold (fig. 2.11).[189] Men and women alike took part in enjoying the inundated landscape of Cairo from their houses, as one French writer remarked:

> A multitude of women are at their windows overlooking the pond, and the facades of all houses are lit during the evening. I think it is one of the great spectacles a night can offer to the eyes, while the freshness of the night is enhanced by that of the water, compensating for the heat of the day.[190]

For those living along the Khalig, the water also cooled their houses and created private water vistas. Homes along the Khalig took advantage of the ecology of the canal with verandas, trees and gardens overlooking its waters (fig. 2.12). Elite women cloistered in the harem might look out on the water from mashrabiyya-screened windows (figs. 2.13-2.14). These projections provided a space to look but remain apart from the bustle of the street. Women writers describe looking out from the mashrabiyya as a process of drinking and rumination. The window provided a vista and access, but also a metaphor of their seclusion.[191] Ali Mubarak notes the presence of women's voices through open windows in houses over the Khalig during the celebrations, and that they looked out to view the festivities.[192]

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[189] De Maillet, as quoted in: Behrens-Abouseif, *Azbakiya and its Environs*, 21.

[190] Ibid. Ali Mubarak also describes women at the windows of the houses along the Khalig during the celebration.

[191] See: Marilyn Booth, "Locating Women's Autobiographical Writing in Colonial Egypt," *Journal of Women's History* 25, no. 2 (2013): 36–60.

[192] Ali Mubarak, *al-Khitat,* vol 18, 35.

The Khalig formed the background of many neighborhoods in the city, not just those of the elite or merchant classes who had fine houses overlooking the Khalig downtown (fig. 2.15). The canal bisected the length of the city, moving from wide and open on the outskirts to narrow and densely packed in the midst of the city's old quarters. Many people depended on the Khalig for their everyday needs. It was a critical potable water resource as well as a social space, a place to wash, to get water, to water animals, and gather (fig. 2.16). People interacted with the Khalig in different ways but interacting with the Khalig was a part of any Cairene's daily existence. With the closing of the Khalig this landscape permanently changed. One of the primary functions of the Khalig was lost forever, as a social and ceremonial water center. The other functions – as tap and even as sewer, were shuttled underground, removed from potential "contamination" as well as hidden from view.

Absent Water, Inhabited Bridges

Muhammad Ali's personal doctor, Antoine Clot, attempted to close the canal in the 1840s and replace it with narrow field. He claimed its closure was in the interest of public health, and that the people with homes along the canal could not be trusted to follow rules prohibiting dumping in the canal.[193] Members of the British colonial government attempted to close the canal shortly after their arrival in Egypt. In 1885 the Drainage Commission made up entirely of European experts recommended that the Khalig be closed for reasons of public health.[194] Further drainage schemes from the 1890s also suggested closing the Khalig, but these were never taken up, in part due to cost and in part due to the cultural

[193] Fahmy, *In Quest of Justice*, 164. Fahmy's section on the Khalig discusses several other proposed schemes to manage its waters.

[194] Charles Carkeet James, "The Main Drainage of Cairo," *Minutes of the Proceedings of the Institution of Civil Engineers*, 1916, 57–58; Ismail, "Engineering Metropolis," especially chapter 1; Alleaume, "Hygiène publique et travaux publics," especially 151-161.

importance of the canal.[195] Charles Carkeet James, an engineer who worked in India and specialized in drainage systems, wrote a summary of drainage projects in Cairo and characterized the Khalig as "a dumping ground for foul matter."[196] An important part of James's argument for its closing was that the Khalig was empty as "water is only available in it three months of the year."[197] For him and other officials, its closing was inevitable. It appears from the sources that most foreign experts did not seem to seriously consider alternate suggestions, such as Ali Mubarak's plan to dredge and maintain the canal properly.[198]

An opportunity to close the canal arose in 1895 when a series of cholera cases were linked to homes along the canal.[199] In September of that year the canal was closed temporarily and disinfected with lime. The public viewed this intervention into the management of the Khalig with suspicion, and accused the sanitation authorities of

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[195] Alleaume, "Hygiène publique et travaux publics," 151. Alleaume discusses each of these different schemes. Engineers proposed several substantial schemes to build a drainage system in Cairo over the course of the 1890s, but no plan was implemented until 1906 under the direction of Carkeet James.

[196] James, "Main Drainage," 57. James was the engineer chosen to implement the 1906 drainage scheme. Among other things, the scheme classified people's consumption by their dwelling type, allowing less water to those who lived in dwellings of "lower class." See Alleaume, "Hygiène publique et travaux publics," 155-161;" Ismail, "Engineering Metropolis," especially chapter 4.

[197] James, "Main Drainage," 57.

[198] See Ali Mubarak, *al-Khitat*, vol 18, 120-124. Alleaume mentions Mubarak's proposal for canal maintenance in detail as stored in the Public Works archive at the Egyptian National Archives. She also mentions that the 1892 drainage commission ultimately did not chose the Khalig for their underground sewer because of its importance to the city, although this decision holds little weight considering the scheme was itself abandoned. See Alleaume, "Hygiène publique et travaux publics," 151-154. According to my research, it was rare that a European official or European-led body did not recommend closing the Khalig. For one example of such an outlier, see: See Onofrio Abbate, "Questions hygieniques sur la ville du Caire," *Bulletin de l'Institut Egyptien* 2, no. 2 (1881): 55–69.

[199] "Report on the Epidemic of Cholera … 1895 & 1896," 57.

poisoning the entire length of the canal bed.[200] Public Health reports on the cholera epidemic from this time characterize the Khalig as empty, polluted, and a danger to public health: "The Khalig is a narrow canal running through the heart of the City and only filled at high Nile…that the Khalig was liable to specific pollution, and was so polluted, there can I think be no doubt."[201]

Hygienists, colonial officials, and some Egyptian members of the sanitary, public works, and public health units extended their focus on Cairo's seasonal water sources beyond the Khalig. This amounted to draining, sealing, and filling seasonal lakes and ponds, such as Birkat al-Fil and Birkat al-Ratl. Over the course of the 1890s and 1910s, the Public Works Department filled in dozens of ponds and lakes in the city of Cairo.[202] These bodies of water are referred to as "birkets," an anglicized transliteration of the Arabic word for lake or pond.[203] Evelyn Baring, the consul of Egypt from 1883-1907, designated ponds (birkets in the text) as "death traps."[204] A special section in the early twentieth-century Department of Public Health Reports is dedicated to charting the progress of identifying and draining

[200] Chapter three in this dissertation discusses this event and its significance in more detail. The closure of water sources as a cholera sanitation measure was not well received by Egyptians of all classes, although the peasant classes were more directly affected and less likely to trust the sanitation authority or their justifications.

[201] "Report on the Epidemic of Cholera … 1895 & 1896," 58-59. The author of this section notes that there is a ceremonial importance to the canal, but this is not taken into consideration in terms of whether it is worth preserving.

[202] A cursory review of *al-Ahram* for the 1890s showed frequent reporting on the Public Works Department efforts to close ponds. These notices are included under the section "al-Asima" (The Capital), usually on page 1 or 2. Al-Asima includes other administrative news, such as orders of the Public Health Department (Diwan/Idarat al-Sihha) or Ministry of Finance (Diwan al-Mal), among other matters.

[203] بِرِكَة ج. برك

[204] "Report on the administration of Egypt," 1906, 1487.

these bodies of water in cities and towns throughout Egypt.[205] For the British authority, these efforts were part of a broader imperial policy that was simultaneously reshaping water landscapes in India.[206] The guiding principle was that any open water source, despite how it was managed, was a potential source of contamination, and the people who used them could not be trusted to act within the precepts of modern public health and medical theory. As I will discuss in the following chapter, despite these bold claims, much was not understood about what made water contaminated, nor were methods in the 1890s of determining bad water refined or widely available. Visual and sensorial cues were often the best evidence, and in the case of the Khalig, the annual flood cycle that left it empty of water at certain times of the year made it suspect.

The BNF photograph album introduced above contains 17 individual photographs of the Khalig, usually organized two per page (see figs. 2.1-2.5, 2.17, 2.18). Only five of these, including the first two images of the album, depict the Khalig with water. The photographs of the canal without water are not dated but were likely taken around the same time as those of the Khalig full. The latter photographs date from 1892 and 1895. Images of the canal full of water are taken from above and emphasize uninterrupted stretches of water (fig. 2.1). In contrast, the images of the canal without water are taken from the canal bed, the subject of the image invariably a bridge or crossing stretching across the Khalig (figs. 2.2-2.5).

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[205] See for example, "Annual Report on the Ministry of Public Health for 1913," (Cairo: Government Press, 1915), 30. I will discuss this phenomenon briefly in chapter four.

[206] There is an imperial context for water policy that worked from a set of general assumptions and was adapted to local circumstances. Paula Sanders noted in 2008 that very few studies of British-occupied Egypt had taken into account the significance of British colonization of India. There are frequent mentions of connections in official reports: similar policies, the same people performing similar jobs, and so on. See: Sanders, *Creating Medieval Cairo*, especially chapter one.

Considering the history of the Khalig outlined above, the inhabited bridges in these photographs disrupt a neat narrative of an empty channel waiting to be filled. Inhabited bridges claim the canal's water space, even as the canal is empty of water. These photographs emphasize what is glossed over by colonial officials: that the canal is important, that it is inhabited, that it is not empty. Life on the Khalig was full of constructive adaptations, within, around, and across water.[207] The Khalig was a space where the everyday aspects of living, outside or liminal to modern precepts of urban planning, came forward.[208] Everyday "folk," and cultural uses of urban water infrastructure, even absent water, are evident in these photographs. Modern colonial urban planning and public health discourse would consider such uses as improper, and thus unhealthy, and even illegitimate.[209] These photographs complicate fervent textual representations of water spaces as sites of contamination and danger. People chose concertedly to continue to inhabit, nonetheless.

An 1874 map of Cairo indicates at least twenty bridges along the length of the Khalig, some wide and some narrow, linking the eastern and western halves of the city (figs. 12.5, 2.17-2.18). Many of the bridges depicted in the album seem narrow, and perhaps completely transformed from crossings into living spaces over the canal (see figs. 2.2-2.5). Windows, some large with mashrabiyya screens, pierce these bridges suggesting prolonged

[207] For an explication of the quiet encroachment of the ordinary, see: Asef Bayat, *Life as Politics: How Ordinary People Change the Middle East* (Stanford: Stanford University Press, 2013).

[208] Egyptian reformers understood and agreed with some aspects of European modern urban reform. Ali Mubarak, for example, believed that the city of Cairo would benefit from public parks and wide boulevards. He understood that certain sacrifices to the so-called traditional urban fabric were necessary.

[209] There are many examples of how folk water practice was demonized, especially during times of public health crisis, such as the cholera epidemics. For more on this see chapter three of this dissertation. For another discussion, see Ismail, "Epicures and Experts."

habitation (fig. 2.4, R). These are culturally specific construction details designed to take advantage of the ecology and aesthetics of the Khalig. One photograph labeled "El Mouski" shows a bridge over the canal with two small, shuttered windows built into white-washed wooden boards (fig. 2.3, L).[210] The photograph to its right, labeled "El Amir Hussein," shows what seem to be devices for raising water situated in two openings (fig. 2.3, R). The wall over the bridge is constructed of brick and rubble masonry, the two openings are reinforced with a length of stone. A man and spinning wheel sit in the canal bed under the bridge, making further use of the "empty" canal. The inhabitants of this bridge have thus adapted to the changing levels of the seasonal canal. It is useful both full and empty of water.

Other photographs of the empty Khalig show areas under construction or changed significantly in the recent past to accommodate other modern infrastructure projects. One photograph shows a rail line on a bridge across the canal near Sayyida Zaynab (fig. 2.5, L). The rail line was opened in 1888 and connected Cairo to Helwan about 35 miles to the south. The creation of this railway thoroughfare necessitated the destruction of a wall, the edges of which we can see on the right-hand side of the photograph.

The accompanying photograph shows the Khalig passing under Muhammad Ali Street, constructed in the 1870s as part of Viceroy Ismail's modernization initiatives (fig. 2.5, R).[211] The worm's eye view angle of the photograph allows only for partial glimpses of many people passing over the bridge.

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[210] Mousky is a district in downtown Cairo.

[211] Mercedes Volait, "Making Cairo Modern (1870-1950): Multiple Models for a European-Style Urbanism," in *Urbanism: Imported or Exported?* ed. Joe Nasr and Mercedes Volait (Chichester: Wiley-Academy, 2003), 27. Ali Mubarak spearheaded some of these projects as Head of the Department of Public Works.

What appears when we consider these photographs as a group is a process of documenting the Khalig without water. A process of moving along its bed, stopping to curate an image that captures the absence of water, and the integration of habitation across it. Indeed, in one photograph titled “Bein el-Sourein” we can just see the subject of another, “El Muski;” a long length of cloth across the latter is just visible in the former (fig. 2.4, R, fig. 2.3, L). The photographs form a syncopated, punctuated schematic map of the Khalig. They show the absence of water along it, but also sustained and irresolute encroachment. Indeed, the process of taking these photographs and their particular framing would not have been possible without this absence. Unlike textual descriptions of the canal that focus almost exclusively on the negative aspects of this habitation and the absence of water, the photographs are not nearly as successful in circumscribing the Khalig. Especially since the album as a whole showcases the resilience of Cairene urban occupation despite significant morphological change (fig. 2.19).

The album photographs challenge the traditional narrative of the nineteenth-century canal as contaminated and empty. Yet the discourse of public health made little space for parallel or intersecting meanings of the canal. Sanitation officials and colonial administrators in both scientific journals and popular literature aimed to define the Khalig as essentially dangerous, an empty polluted space awaiting unilateral action. However, the interests of public health and cholera prevention were not the reasons the canal was permanently closed. The central colonial government never approved any substantial project to manage the canal, filling in, dredging, or otherwise. It was not until the money was provided through corporate interests that the canal was closed. This raised questions about

the validity of the public health claim, and the further entanglement in public discourse of local and colonial government officials with corporate interests.

The Water Company, the Tram Company, and the Transformation of the Khalig

By the end of the nineteenth-century, Cairo resembled any other modern city. It had paved roads, squares, public parks, wide boulevards, gas lighting, rail, public trams, underground water pipes and taps, fire hydrants, among other amenities. As discussed in chapter one, public service infrastructure such as indoor plumbing was uneven and not widely available to many inhabitants. Like other companies, the Cairo Tram Company was granted significant concessions to provide the labor and money to build a tram line across the Khalig. This project also benefited the Cairo Water Company.

The relationship between corporations and the British colonial government was often cozy, even if the corporations were not British. The Cairo Tram Company was part of a Belgian transportation conglomerate. Long before there was serious talk of closing the Khalig, the Egyptian popular press was criticizing the relationship of the British colonial government with the Water Company as corrupt. In the November 1888 issue of *al-Shifa*', two articles link water and the current state of public health in the city of Cairo. The first article by F.M. Sandwith titled, "Analysis of Water at Cairo," investigates the quality of water filtered by the Cairo Water Company. Sandwith relates the history of the company, describes its filtering process, and includes a chemical analysis of the company's water. He argues that his findings indicate that the company's filtering process is not sufficient. The company does not hold to their mission that "the health of the community is the most

important thing…and so we provide the people with very good water." [212] In a companion essay, author Sayyid Kimawi analyzes comparative death rates in Cairo and in European cities. Kimawi condemns Egypt's high mortality rates and blames the British government for intentional failure.[213] These two articles in tandem argue that the push to corporate taps is not the benefit the state claims; indeed, it is dangerous as the state does not act in the people's best interest. The state and corporations cannot be trusted to define or distribute clean water.

In 1894, *al-Ahram* reported on four petitions that had been submitted by various entities and government-aligned agencies to close the Khalig as a matter of public health. The author argues that these do not consider "society" at large in their reasoning. The author links the timing of the canal's closing to efforts to expand the Water Company's reach, efforts that directly benefitted its president, Nubar Pasha.[214]

An article in *al-Ahram* published on July 21, 1897, seems to confirm that "public health" was a convenient justification to offer skeptical Cairenes that did not necessarily approve of the power of corporate entities to change beloved cultural urban spaces. The anonymous author claims that an informant approached newspaper staff with the news that the real reason the Khalig's was closing was to build a tram across it, and that both the Cairo

[212] F.M. Sandwith, "Kalam fi al-Sihha fi al-Qahira," *Al-Shifa'/Revue Arabe Mensuelle de Médicine* 3, no. 9 (November 1888): 371–81. Sandwith was a British official critical of the British and Egyptian official responses to the 1883 cholera epidemic.

[213] Sayyid Lani Kimawi, "Tahlil Miyah Al-Qahira," *Al-Shifa'/Revue Arabe Mensuelle de Médicine* 3, no. 9 (November 1888), 363.

[214] *Al-Ahram* (August 4, 1894): 2. This may have referred to Nubar Nubarian Pasha, the foreign minister of several of the viceroys, or his son, Bughos Nubar. Nubar Nubarian died in 1899. Both were involved in the Cairo Water Company. See: Goldschmidt, *Biographical Dictionary of Modern Egypt*, 157-158; "Assemblées Générales," 1.

Tramway Company and Cairo Water Company would benefit from this arrangement. The author states that public health is reason enough to close the Khalig, but that the Public Health Department should be honest. The article ends with a statement roughly translated as "the government's relationship with the Cairo Tramway Company stinks, and they (government officials) should be more transparent about their dealings and reasoning."[215] The concern was well placed, as the transformation of the Khalig into a road would be a destructive upheaval of an established ecology.

One of the most striking pages of the BNF album shows four separate photographs (fig. 2.2). Two of these are of the same area of the Khalig, one from 1895, and the other from 1946 (fig. 2.2, LR, MR, 2.20). The latter image is quite small, placed awkwardly on the page in between its 1895 counterpart and an image of the canal near Birkat al-Fil. In comparison the two photographs indicate a considerable change in the urban fabric around the Khalig after the removal of the canal and the construction of the tram. An area once full of water, covered in trees and open terraces has been "filled in," but also summarily gutted. Half of the buildings on the left are mere shells, their second stories and projections are gone. The lack of buildings and vegetation is what is most obvious, the little tram in the background the unassuming reason for these absences. There are no other similar images or comparative groups in the album. The album's other photographic pairings and groups do not highlight the destructive phases of transformation, but rather present images of "complete" projects (see fig. 2.19). This photograph is singular in its presentation of a part of Cairo that has been radically damaged through the modernization process. The filling of the Khalig is presented in this tiny photo as a violent, destructive act. And yet, people

[215] *Al-Ahram*, (July 21, 1897): 2.

continue to inhabit and adapt to these transformations. The tram is full of people, others walk along the street by its side.

The importance of the visual rhetoric of this page and its content cannot be underestimated. What are the stakes of bringing forward this transitional phase as a pivotal and consequential part of unmaking the Khalig? The placement and size of the photograph seems almost apologetic, included as a curiosity. The other two photographs, both representations of the canal full of water and life, literally squeeze the awkward unfinished and destructive moments of the process of the Khalig's transformation between them. But this was just the first of several subsequent expropriation and widening efforts. None of these houses remain today. The street was widened several times over the course of the twentieth century to make way for more cars, more people moving across the city (fig. 2.21).

A short notice in a British colonial report on Egypt for 1898 marks the occasion of the closing of the canal and the building of a street and tram line. The author briefly notes the importance of the canal to the history and culture of Cairo, but in the end characterizes the canal as nonfunctional, thus sufficiently neutralized, and suitable for another purpose. Due to perennial irrigation engineering "the canal had become quite useless."[216] This justification and its rhetorical charge aligns with other colonial and public health officials' writings. It emphasizes a particular type of usefulness: the robust perennial passage of water that characterized well-maintained agricultural canals in the hinterland. Emptiness (of water) and uselessness codify the canal as meaningless empty channel, something that could be put to better use.

[216] "Egypt No. 1 (1898). Report on the Finances, Administration, and Condition of Egypt and the Progress of Reforms," Command Papers, 1898, Nineteenth-Century House of Commons Sessional Papers, 39.

However, the author of the report makes two further curious remarks. The author writes that the cultural importance of the canal concerned officials at first and encouraged them to plan and begin the process of construction surreptitiously: "In the course of last year (1897) …a decision was quietly taken, and the work of filling up was commenced. The Khalig has now disappeared." The author continues that in contrast to officials' expectations: "The native population of Cairo have regarded the matter with complete unconcern. House proprietors in the neighborhood have gained considerably by the rise in the value of their properties."[217]

These statements display a concerted blindness to the reality of the Khalig's transformation. First, the author claims to be quite unaware of the considerable disapproval of the canal's closing that was playing out in public venues such as newspapers. Additionally, the author passively admits that the change was considerable. This is evident in his statement regarding the decision to move the work forward without warning, and in the carefully worded remark that house values had increased "in the neighborhood." The gutted houses *along* the new street, as depicted in the tiny photograph in figure 2.20, are not mentioned.

The Arabic popular press reported on the closing of the Khalig. In *al-Hilal,* a few lines under the Egyptian News section noted that the filling of the canal had begun. The reason provided is public health: "It was full of filth and mold and was the source of fevers. Its filling will ease [the spread] of disease."[218] At the end of December 1899, *al-Ahram* ran a short notice on the completion of the Khalig project, stating that the Cairo Tram Company

[217] Ibid.

[218] "Radam al-Khalig," Hawadith al-Masriya, *Al-Hilal* (April 15, 1897): 634.

had completed its lines and had asked for the Public Works Department to test and open them to the public.[219] In 1898 *al-Mu'ayyad*, a daily anti-British newspaper, published a long article about the history of the Khalig, focusing mainly on its medieval mythic history. At the end, the author states: "As we see it, the history of the Khalig has ended at last. From a piece [of land] on the Ismailia Canal (the location of the Tramway Company office) … it has been filled in and turned into a road for a tram."[220]

After the canal was closed, the state and people of Cairo continued to celebrate the ceremony of the Rise of the Nile, but twentieth-century popular accounts do not necessarily retain the history of the Khalig as an integral part of it. In his 1925 history of the Nile, Omar Tousson, a member of the Egyptian royal family, describes the twentieth-century ceremony as much changed from its past glory and largely an administrative affair: "Today the ceremony continues to be celebrated, much lost in splendor and importance, science has replaced nature… the canal was filled in in 1899, and the ceremony of its opening is no longer preserved except as a purely historical note."[221] In an *al-Musawwar* article from 1928, a collection of photographs of state officials, Roda Island, and people gathered along the banks of the Nile accompany a short description of the ceremony that year (fig. 2.22).[222] The text focuses on the state ceremony, with little mention of the public's participation, and no mention at all of the Khalig al-Masri. Indeed, as early as 1919 there is a distinctive shift

[219] *Al-Ahram* (December 28, 1899): 2.

[220] I have simplified this translation some. It seems to mean two things: that the canal will be filled in from where it begins at the Ismailia Canal, as well as referencing the entity responsible, the Tram Company. The Tram Company office was located on the Ismailia Canal in Bulaq. The Ismailia Canal was also filled in and turned into a road with a tram at about this same time.

[221] Tousson, *Memoire du Nil*, 252-253.

[222] *Al-Musawwar*, 202 (August 28, 1928), 12.

in popular representations of the ceremony that focus on its pharaonic and ancient history rather than its medieval or Ottoman history.[223] For example, in Ahmad Shawqi's poem, "Qasidat al-Nil," (1919) the author does not mention the Khalig, but focuses on biblical and Pharaonic references, including the Bride of the Nile.[224] This poem was adapted into a 27-minute song for Umm Kulthum, the beloved Egyptian singer. As the twentieth century progressed, the name Khalig would be dropped altogether from Shari' al-Khalig. In 1958 the name was changed to Port Said Street, removing the last trace of the artery's original function from the city fabric.[225]

At this juncture, we are left with the fact that the cultural significance of the Khalig had been neutralized, but not erased. Its role in the ceremony of Nile inundation was fairly quickly forgotten, but people's understanding and celebration of the ceremony itself was resilient and adapted accordingly. Tousson's dismissive description of the 1925 ceremony aside, people continued to celebrate the rise of the Nile at Cairo, in lighted boats, with music and fireworks. A 1958 article on the celebration bears witness to the continuation of familiar key aspects of the celebration of the Nile flood and the cultural importance of water:

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[223] Authors continue to write about the medieval history of the Khalig, but this period is not as central to popular accounts as it was prior to the canal's closing. For one example, see: "Wafa' al-Nil wa Nuwruz," *al-Muqtataf* 61, 2 (July 1, 1922), 120-123.

[224] This is no doubt part of nationalist rhetoric that reclaimed Egypt's ancient past from colonial intellectual and popular history that had attempted to claim pharaonic Egypt as part of its own legacy. See: Ahmad Shawqi, *Qasidat al-Nil/Le Nil*, ed. Habib Gazali Bey (Cairo, 1932); Dayf Shawqi, *Shawqi, Sha'ir al-asr al-Hadith* (al-Qahira: Dar al-Ma'arif bi-Misr, 1963).

[225] "Indama yatazu' al-ard Masr!" *al-Ahram* (August 8, 1957), 8. The renaming of the road at this time is significant, and certainly related to the events of the Suez Crisis of 1956. Port Said is a city along the Suez Canal. For the date of the change, see: Ola Seif, "Bab al-Khalq: Stories of a Canal, a Street, a Museum and a National Library," (February 27, 2014) *al-Ahram*, https://bit.ly/3AEinmS.

> Don't be afraid if you hear cannon fire at around 5:30 this evening… you should be glad for it signals Wafa' al-Nil (inundation) and tomorrow is a celebration! Especially for those in Cairo... For the ancient Egyptians the Nile was their livelihood, a place of worship, and their primary mode of transportation. It was a path of war and peace. It is Egypt's foundation! [Indeed] the Nile is the architecture of Egypt.[226]

Neutralizing the Nilometer: A Stone Column in a Muddy Well

Both the Khalig and the Nilometer were critical to the ceremonial importance and practical management of the Nile flood. However, their fates diverged. The Khalig was transformed into a street, the Nilometer into a monument. Both were changed into something deemed more useful, divulged of their original function as part of a sophisticated flood management system. These changes inextricably linked the Nilometer with Cairo's Arab-Islamic past, whereas the removal of the Khalig resulted in a subtle reorientation of the Rise of the Nile Ceremony towards Egypt's Pharaonic history.

The Nilometer (*al-Miqyas*) is located on the southern tip of the island of Roda in the Nile (figs. 2.23-2.26). The Nilometer is a square well directly connected to the Nile by three tunnels at varying heights. In the center is a column with a Corinthian capital. On the column are marks and inscriptions in Kufic script that indicate the level of the Nile in cubits from one at the base to 19 in the middle of the capital at the top (fig. 2.24).[227] The present structure was commissioned by the Abbasid caliph al-Mutawakkil in 861 after the original dating to about 100 years earlier was destroyed by a record high flood.[228] It has been

[226] "Indama yatazu' al-ard Masr!" 8.

[227] For a description of the Nilometer, see K. A. C. Creswell, *Early Muslim Architecture*, vol 2 (Oxford: Clarendon Press, 1969) 290-30.

[228] Doris Behrens-Abouseif, *Islamic Architecture in Cairo*, 51.

reconstructed periodically over the years.[229] Around the wall are inscriptions that reference abundance, good harvest, water, and paradise. These inscriptions emphasize that water is a gift from God, and that this gift transforms the landscape.[230] For example, on the west wall near the 17-cubit, one inscription reads: "Do you see that when God sends down rain from the sky the land turns to green? For God is good and all-knowing."[231] These texts are a reminder of the ability of the flood waters to shape and transform the environment and landscape of Cairo, creating exceptional seasonal experiences of its water spaces.

In volume 18 of his *Khitat*, Ali Mubarak includes a study of the history of the Nilometer, an important tool for the dozens of tables of Nile measurements that take up 77 pages of the text. In one section, he writes about maintenance work on the Nilometer in 1887.[232] He describes a laborious process. The well was muddy and had not been drained in years. His crew tried to pump out the mud and water, but their machines were too weak. The Nile was rising, so they were forced to halt their work. Ali Mubarak also describes installing a new Nilometer with its measurements in meters on Roda Island at the Director of the Irrigation Department's orders. This new Nilometer would thereafter record the official measurements of the Nile flood. This marks a critical turning point in the transformation of the Nilometer from an architecture of inundation into a monument.

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[229] Tousson, *Memoire du Nil*. A structure as old as the Nilometer subjected continually to water and silt would need near constant maintenance.

[230] Doris Behrens-Abouseif indicates that these phrases are references to the Qur'an. *Islamic Architecture in Cairo*, 51. Amin Sami provides transcriptions in Arabic as per Ali Mubarak, Sami, *Taqwim al-Nil*, Vol 1, 91-92.

[231] Sami, *Taqwim al-Nil*, 92. Tousson also includes transcriptions of the inscriptions and French translations: Tousson, *Memoire du Nil*, 310.

[232] Ali Mubarak, *al-Khitat,* vol 18, 110-111.

While architectural historian and American University in Cairo professor K.A.C. Creswell was researching the Nilometer in the early 1920s, he noted that the well's passages had remained open, despite it no longer being used to measure the Nile.[233] It had not been maintained and what remained was a muddy well: "The mud was of extraordinary viscosity and progress was slow, in spite of a gang of over 20 men who worked in the pit or lined the staircase, and passed up buckets half full of clay-like mud…"[234] Work ceased when they realized the column and parts of the adjacent Manasterli Palace were sinking. The Manasterli Palace was an Ottoman structure built by Hassan Fouad al-Manasterli, the governor of Cairo, in 1851.[235] The unintended effect of emptying the well of the precious remains of the flood, the rich silt, and the collapse of nearby buildings is an ironic reminder of the precarity of water ecosystems. Indeed, at the same time as Creswell was so determined to rid the well of mud he thought should not be there, one effect of perennial irrigation, the lack of the Nile's nitrogen-rich mud, was beginning to be felt acutely in the agricultural lands north of the Aswan Dam.[236] Crops began to falter, and farmers had to purchase synthetic fertilizer in order to save them.

During the 1920s and 30s, the Comité de la Conservation de l'Art Arabe used some of its budget to separate the Nilometer from the Nile in order to preserve it. They closed its three tunnels, cleaned the well and reinforced the column. The Comité also restored the roof

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[233] Creswell, *Early Muslim Architecture*, 290-291.

[234] Ibid, 291.

[235] Other similar palaces and hunting lodges dotted Roda Island and Zamalek (Gezira) during the nineteenth century. For a brief overview of the history of the palace and its surroundings: Salwa Samir, "Manasterly Palace in Cairo," *The Egyptian Gazette* (August 2, 2021): https://egyptian-gazette.com/entertainment/manasterly-palace-in-cairo/.

[236] For a detailed discussion of the many unintended consequences of the Aswan Dam projects of the early twentieth century, see: Derr, *The Lived Nile*.

and began to draft and study the monument and its inscriptions. Through these processes, the Nilometer lost its link to the Nile and became a monument. It was subsumed into the so-called Arab-Islamic architectural heritage of Cairo. Part of this process included studying, dating, and defining the structure as medieval. This was one of Creswell's main goals – to describe and define the history of Cairene architecture through a series of discrete stylistic and structural patterns. The work of the Comité and Creswell formed part of a curious but concerted effort to define monuments purely by their physical appearance or style and rank them in terms of how closely they aligned with a largely arbitrary set of criteria. This type of valuation denied *practice* and contemporary socio-cultural meaning as important, as if such matters could be divorced from artistic and historic value. In this sense the process of the Nilometer's assessment and valuation was quite similar to the Khalig, if ultimately leading to a different outcome.

Over the course of the 1920s, 30s and 40s, the Nilometer's landscape became a part of efforts to create ensembles and zones of historic monuments that supported new shared urban and national identities. The Nilometer had always been part of a complex. A mosque, several Ottoman palaces including the Manasterli Palace, orchards and small villages inhabited Roda Island alongside the Nilometer. The Comité de la Conservation de l'Art Arabe retained in part this ensemble: "It is decided…to save the palaces in question. These monuments…nicely compliment the Nilometer and form, with the gardens that encircle it, a unique site in Cairo of which its fame can be traced back to the first Muslim dynasties of Egypt."[237] In a page from another one of the BNF albums, there are a collection of clippings

[237] Greg Robert Hyde, et al. "Nilomètre de Rawdah," in: *Comité de Conservation des Monuments de l'Art Arabe*. Fascicule 37, exercice 1933-1935, 1940. pp. 123-124.

from popular magazines on the restoration of the Nilometer during these decades (fig. 2.26). Some of these show images of the Nilometer well, others the adjacent Manasterli Palace. These clippings indicate that the preservation of the Nilometer had taken on popular currency, and this and similar news were important to the learned elite buying these magazines. Indeed, monuments became new spaces in which to participate and build new social and political identities. The caption in French for the image in the upper left notes that the salamlik (reception hall) of Manasterli Palace recently held a reception for the Arab League.[238] In 1998, part of the palace was turned into a museum for the great Egyptian singer Umm Kulthum and a concert hall.[239]

The choice to preserve in some form the Nilometer's landscape of inundation was a specific set of choices in contrast to those made for the Khalig. It is not the purpose of this comparison to speculate on why one was saved and the other was not. Rather I aim to emphasize through this comparison two things. First, that the closure of the Khalig was not inevitable, but rather a set of clearly defined choices. Second, that in order to decide the fate of both monuments, a process of disarticulating their connection to each other (as infrastructures) and dismantling them as architecture was necessary. In order to become part of new landscapes, their relationship to each other, to the flood, and as infrastructure was necessarily diminished, even erased. The Nilometer's place as a monument, to peruse, to admire, and to visit alongside other revered and preserved cultural spaces emphasizes a key part of the process of transforming inundation infrastructure. Both monuments' relationship

[238] The Arab League was founded in 1945 in Cairo. It is a diplomatic association of several Arab nations.

[239] For a short history on the founding of the Umm Kulthum museum and some of the objects on views, see: "Taqrir Khas bi-Mathaf Umm Kulthum," Mathaf Umm Kulthum, accessed May 19, 2022: https://bit.ly/3ACoNCP.

to water culturally and physically had to be diminished, neutralized, dismantled for the transformation to take place. The muddy well had to be emptied, the empty channel had to be filled.

Resistance in/as another Infrastructure

As Janet Abu Lughod has noted, the creation of Shari‘ al-Khalig with a tram along the canal's path created a continuous north-south artery. Commerce and bodies passed along it. Communities also formed on this new road, including on the rails of its trams. Habits of movement, both for everyday and political purposes, challenged the primacy of trams, their schedules, and their function as capitalist modes of production.[240] This afterlife of the canal is significant, as it highlights the propensity for infrastructure to be a meaningful cultural spatial practice.

In photographs and short films of tram rides from the early twentieth century, people integrate their everyday movement with the tram (figs. 2.27-2.29).[241] One particular act stands out – people walking across the rail lines as the tram approaches at a confident, even pace. Walking across tracks was potentially dangerous; accidents were common, especially when trams were first introduced into the city. On Barak has posited that such human-technological interactions formed infrastructures of aggression.[242] And yet, there is

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[240] For a discussion of trains, schedules, time and capitalism in Egypt, see: On Barak, *On Time: Technology and Temporality in Modern Egypt* (Berkeley: University of California Press, 2013).

[241] For several fascinating short videos of people interacting with tram lines in Cairo and Alexandria, see: Abdurrahman Ahmed, "Qisat Muasalat al-Misriyin... min al-Hantur ila al-Hafilat al-Kahraba'iya," *al-Jazeera* December 28, 2019: https://bit.ly/3PTV9O1.

[242] On Barak, "Scraping the Surface: The Techno-Politics of Modern Streets in Turn-of-Twentieth-Century Alexandria," *Mediterranean Historical Review: The Late Ottoman Port-Cities and Their Inhabitants: Subjectivity, Urbanity, and Conflicting Orders* 24, no. 2 (2009): 187–205.

something modest, orderly, purposeful, and meaningful in people walking in front of trams that spurns the potential for violence and aggression. People walk across the rails, they jump on and off the tram, they hang onto the side creating a liminal space that links passage through and being in. The street and tram are engulfed, encumbered, integrated with the steady flow of bodies, even if only potentially and temporarily in passing. I contend that this is significant, and reminiscent of people passing over the Khalig on one of its many bridges, or swimming in its waters.

The closing of the Khalig coincided with a steady rise in Nationalist and labor rights efforts that aimed to reject the unilateral claim of corporations and British colonial rule to Cairo's infrastructure. Intellectual and working-class resistance movements coalesced in the public space of the street, in, around and across the tram. A 1915 image of a young boy selling "seditious" papers to travelers on the Cairo Tram depicts one aspect of the emergence of these new communities (fig. 2.30). Cairo Tram Company workers went on strike numerous times beginning in 1907 for higher wages, fewer hours, and better treatment. These seminal labor rights movements are integrated with the spatial practice of infrastructure, with its reliance on bodies. Tramway workers and their families laid across the tramway tracks day and night during the 1907 strike; when police removed them, they moved to the next line of track.[243] These acts were linked to and instigated by the metal of the tramline that flowed through the streets of Cairo as water once did. In this sense, the attempt to neutralize the cultural significance of the Khalig manifestly failed. Shari' al-

[243] These events were reported on as they occurred over the course of several days in *al-Ahram*. See for example: *al-Ahram* (October 19, 1908): 2. For a discussion of this strike, see: Joel Beinin and Zachary Lockman, *Workers on the Nile: Nationalism, Communism, Islam, and the Egyptian Working Class, 1882-1954* (Princeton: Princeton University Press, 1987), 50-60.

Khalig remained inhabited, remained a meeting space and a crossing space, and as such retained the critical social and cultural infrastructural function of its predecessor. The images of people walking across and in front of the tram are reminiscent of people inhabiting the bridges of the Khalig, potentially inhibiting free passage across, appropriating the space of one way of passing for another.

The Cairo Tram Company paid to fill in the Khalig to monopolize a rare uninterrupted north-south artery. And yet, rather than becoming a neutral space of commercial expansion, the street was also used to protest, to disobey, for other purposes entirely. Bodies on tram cars, on tram tracks, moving across tramlines, disrupting the ideal move of capital form an appropriate postscript to the history of the Khalig. Water no longer flowed through Cairo as it once did, but the street that replaced it remained an infrastructure of meaningful spatial practice.

Conclusion

The water of the Khalig had brought life to Cairo for thousands of years. It had served as the city's main source of potable water and irrigated the fields in its northern suburbs. By 1899, it would do none of those things. Open water access during the late nineteenth century contributed to the spread of diseases such as cholera, but the corporate proposition of monetized underground metal pipes was not the inevitable solution. For one thing it laid the groundwork for an uneven system that, despite its rhetoric of service to public health, did not benefit those most vulnerable. Corporate water infrastructure modernization in Cairo continues to leave many without access to water. Today's fragile and uneven water system forces people to resort to informal, quasi-legal methods to obtain potable water, including siphoning, and manual transport from public or charitable sources.

These methods of obtaining critical resources, of claiming the right to carry water are a sign of the continual, uninterrupted process of remaking infrastructure. The narrative of Cairo's Khalig, or rather the legacy of people claiming its water, continues.

Public health officials, especially (but not exclusively) the British, used the rhetoric of public health to condemn local water practices in Cairo at the end of the nineteenth century, from manual water carrying to public baths, to almost any interaction with the Khalig al-Masri. The roots and stakes of this discourse are global, the consequences local. The Khalig al-Masri was a multifunctional infrastructure, an infrastructure and architecture of Nile inundation that suffused Cairene spatial practice. The narrative of its filling requires reassessment, especially as it assumes the canal was empty of water, thus obsolete. Re-examining the history of the Khalig in conjunction with the Nilometer in part aims to recognize its ecology. The Khalig was a complex system; a social, environmental, and spatial water infrastructure that supported myriad ways of living in Cairo. The absence of water in the Khalig and its filling was not inevitable. Indeed, it was a conscious set of choices driven in part by capital interests that disarticulated and dismantled the cultural narrative and practice of the Nile flood. Even so, the Rise of the Nile continues to be celebrated on August 15 every year, even though the Nile no longer rises at Cairo.

Chapter Three. Concealing Water, Preserving Home: Entangled Resistances to Cholera Sanitation Procedures in Egypt[244]

Introduction

Over the course of four separate cholera epidemics from 1883-1947, the British colonial government and its agencies closed water resources, forcibly entered homes, and removed ill people from their families, ostensibly to prevent the spread of the disease. As with the closing of the Khalig discussed in chapter two, government officials justified cholera sanitation measures as in the best interests of the public health. But the rhetoric, methods, uneven implementation, and reception of these measures suggest they were not *really* about the public, or its health. They were about controlling water, controlling bodies, and policing the private spaces of the home. In response, sanitation methods sparked a determined array of resistance tactics. This chapter highlights this archive of resistance, a series of sources widely available yet little studied.

Scientists had established a significant link between waste contaminated water and the spread of cholera as early as the worldwide epidemics of the 1850s.[245] The relationship of sanitation practice and cholera to advances in modern medicine has been discussed elsewhere.[246] British colonial sanitation practices in Egypt reinterpreted and reframed the

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[244] Parts of the chapter are published as: Alexandra Schultz, "Preserving Home: Resistance to Cholera Sanitation Procedures in Egypt," *Architecture_MPS* (January, 2023).

[245] Christopher Hamlin, *Cholera: The Biography* (Oxford: Oxford University Press, 2009), 209-266.

[246] The bibliography on cholera is vast. The discovery of the cholera bacillus is generally attributed to Charles Koch in 1883 due to field research in Egypt and India. However, treatment and research were culturally and politically specific, and not the same everywhere. This chapter does not discuss treatment in any detail, or the politics of treatment and medical research. Most studies are political and social histories of the disease, and as part of this discussion authors delve into these issues. Besides Hamlin, see: Amir Arsalan Afkhami, *A*

lessons learned in the metropoles to support other goals. The British goal in Egypt was to control the powerful waters of the Nile to extract resources and make money. In the city during the cholera epidemics, this goal morphed into an effort to frame Egyptian sanitation practices, Egyptian water and Egyptian people as dirty, even dangerous. This was done in a variety of ways, but I will focus on the importance of the visual, through thick description, statistics, and microscopy. Egyptian elites participated in all aspects of cholera research, treatment, and implementation of sanitation measures. How they understood cholera and its relationship to water in Egypt is important to foreground in this regard.

The British colonial sanitation authority used the specious claim that Egyptian water and water practices were dirty to justify the aggressive and uneven implementation of invasive emergency sanitation measures. They claimed that people resisted these measures because they did not know any better. However, the archive of resistance refutes this, and tells a more complicated story. People's actions indicate that they understood that the British had alternate goals of controlling water, controlling homes, and controlling bodies.

Egyptians practiced formal and informal methods of resistance against cholera sanitation procedures. They petitioned the state, they wrote letters to newspapers, they confronted officials in their offices, and spread rumors. They hid their ill family members and their belongings, they fled their homes, lied, and persuaded others to lie. It is not difficult to understand why people resisted harsh measures. The process of cholera home sanitation was to strip, chemically scrub, and possibly burn belongings; to remove deathly ill

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Modern Contagion: Imperialism and Public Health in Iran's Age of Cholera (Baltimore: Johns Hopkins University Press, 2019); Donald Fithian Stevens, *Mexico in the Time of Cholera* (Albuquerque: University of New Mexico Press, 2019); Pamela K. Gilbert, *Cholera and Nation: Doctoring the Social Body in Victorian England* (Albany: State University of New York Press, 2008).

family members to hospitals or temporary cholera camps who, if they died, would likely be subject to postmortem treatment many Egyptians found horrifying and unnecessary. Indeed, sanitation intervention may rarely have ended in the recovery of the sick. It quite often ended in the traumatic destruction of property and rifting of families.

One example recorded in the British colonial reports demonstrates the ulterior motives of home invasion under the auspices of disease control:

> On visiting a house in which a death from Cholera had occurred, the body was *almost invariably* found lying in an empty room on the floor, every article of clothing, bedding, etc, had been removed. It was only after a *systematic search* that anything was found, sometimes in another room, sometimes in a neighbor's house…[247]

First, this description describes a pattern. The authorities did not come across one such instance, but many. In these circumstances, the discovery of a body invigorates the pursuit rather than satiates it. The search, seizure and destruction of belongings, and the subsequent invasion of *other homes* follows. From this perspective, acts of resistance are reasonable. The state is not satisfied with cholera victims.

In this chapter, I focus on the first three epidemics of 1883, 1895/6 and 1902. First, I will consider how visual methods crystallized the British colonial assertion that Egyptian water was dirty. Second, I will discuss how Egyptian officials played an important yet uneasy role in supporting sanitation measures. Last, I will discuss the invasion of the home as part and parcel of the first two phenomena. Resistance to sanitation measures underscores that Egyptians rejected the simple claim that sanitation measures were about controlling cholera.

[247] "Report on the Epidemic of Cholera … 1895 & 1896," 89. My emphasis. The phrase "almost invariably" is key to understanding these acts of resistance as patterns.

Frame

Studies on cholera often address the role of governments in managing the disease. In these studies, disease reveals power dynamics, and implicates government leadership in prolonged and unnecessary suffering. For example, Carlos Dimas has recently shown how the Argentinian government's ham-fisted attempts to control cholera through the destruction of produce caused scarcity and exacerbated the fraught relationship between city and hinterland. A staunch belief in miasmas (bad airs) as the cause of cholera prolonged suffering.[248] Dimas more importantly observes that attempts to control disease were strategic, and often benefited the state's interests in other ways. In Argentina, destruction of fruit boosted the state's interest in sugar cultivation. In Egypt, British policy tended to favor plans and policies that allowed for the least disruption of their substantial trade through the Suez Canal and supported their continued pursuit of control of the Nile.[249] These intermingled benefits were not lost on the public.

[248] Carlos Dimas, "Harvesting Cholera: Fruit, Disease and Governance in the Cholera Epidemic of Tucumán, Argentina, 1867–68," *Journal of Latin American Studies* 49, no. 1 (2017): 115–42; idem, *Poisoned Eden: Cholera Epidemics, State-Building, and the Problem of Public Health in Tucumán, Argentina, 1865-1908* (Lincoln: University of Nebraska Press, 2022).

[249] Mariko Ogawa, "Uneasy Bedfellows: Science and Politics in the Refutation of Koch's Bacterial Theory of Cholera," *Bulletin of the History of Medicine* 74, no. 4 (2000): 671–707. A few other studies in this vein include: Stephanie Anne Boyle, "Cholera, Colonialism, and Pilgrimage: Exploring Global/Local Exchange in the Central Egyptian Delta, 1848-1907," *Journal of World History* 26, no. 3 (2015): 581–604. Boyles incorporates some less-used Egyptian sources, but her argument in general stems from British reports. For another perspective, see: Zeinab Abul-Magd, "Rebellion in the Time of Cholera: Failed Empire, Unfinished Nation in Egypt, 1840-1920," *Journal of World History* 21, no. 4 (2010): 691–719. In this article, the author shows how disease and other factors, including famine and systematic marginalization by the state, can incite and encourage organized resistance. However, the government's handling of cholera is a symptom of a larger pattern of marginalization rather than the central problem in Abul-Magd's narrative.

Other studies have focused on cholera's link to policy reform and the emergence of the field of public health, as well as the role of scientific discovery in changing approaches to disease.[250] Such research has investigated the difference between folk cures and scientific medicine, and the uneasy slippage between the two. For example, David Arnold has shown how the British touted efforts to control and treat cholera in India in the nineteenth century as rooted in science but were in fact remarkably similar to local methods.[251] The state did not respect local practices, but frequently co-opted them, especially as the cause and treatment of epidemic diseases such as cholera remained elusive. For example, Egyptians and British alike regarded the rise of the Nile as beneficial to stem disease, even as the latter downplayed the benefits of the flood as a long-term solution. This rhetorical dismissal benefitted the government's parallel aggressive pursuit of perennial irrigation, including dam building in the south, which mitigated the impact of the flood in Egypt's most populous areas.

Even as scholarship always considers water and water infrastructure to an extent, there is a lack of attention to the intertwinement of uneven water infrastructure modernization, modern ideals of cleanliness and sanitation, the home, and bodies. This is noteworthy considering that water was likely the primary source of most cholera infections. What happens if we start with water to understand cholera? How was water characterized, what defined it as clean, dirty, contaminated and how did this impact policy? How did people resist sanitation practices and why? These questions destabilize the assumption that

[250] David Arnold, *Colonizing the Body: State Medicine and Epidemic Disease in Nineteenth-Century India* (Berkeley: University of California Press, 1993); idem, "Cholera and Colonialism in British India," *Past & Present* 113, no. 1 (1986): 118–51.

[251] Arnold, *Colonizing the Body*, 155-197.

cholera and sanitation were (only) scientifically defined. Rather, they were social constructs that in this case aimed to marginalize Egyptian water practice, even as proper sanitation had always formed an important part of Egyptian culture.[252]

There was always resistance to cholera sanitation measures, from noncompliance to riots.[253] Sanitation measures in any country unevenly impacted the poor and most vulnerable. In the colonies, resistance to cholera measures was always entangled with a recognition of the colonial state's larger goals. I understand resistance to cholera as mutable and tactical, but also substantive and stable as patterns indicate strong communal preferences for certain modes of resistance, such as spreading rumors, concealment, and evasion. The instances of resistance that I discuss are largely nonviolent and organized by experience and rumor. In this way, I work from Luise White's understanding of rumor as a culturally unifying force that has the power to communicate essential truths about the insidious cruelty of colonial governance as rooted in violence.[254]

Although this dissertation is about cities, I include rural spaces in this chapter. British colonial sources are sometimes not specific about the location of various episodes of resistance. Indeed, resistance tactics from the urban core to the hinterland seem to have been

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[252] For a fascinating discussion of the early modern roots of epidemiological Orientalism, see: Nükhet Varlik, *Plague and Empire in the Early Modern Mediterranean World: The Ottoman Experience, 1347-1600* (New York: Cambridge University Press, 2015); also see: idem, *Plague and Contagion in the Islamic Mediterranean* (Newark: Rutgers University, 2017).

[253] Dimas, *Poisoned Eden*,165-196; Jeff Sahadeo, "Epidemic and Empire: Ethnicity, Class, and 'Civilization' in the 1892 Tashkent Cholera Riot," *Slavic Review* 64, no. 1 (2005): 117–39.

[254] Luise White, *Speaking with Vampires: Rumor and History in Colonial Africa* (Berkeley, Calif: University of California Press, 2000). For a useful overview of subaltern resistance studies: Chandra, "Rethinking Subaltern Resistance," 563–73.

quite similar. Similar techniques to hide water resources, such as covering wells with discarded wood, or lying to the sanitation authority, proliferated regardless of geographic location.

I use published materials on the cholera epidemics, such as reports by the Public Works Department, the British colonial government, Egyptian newspapers and journals, literary sources, plans, maps, and photographs. All of these are useful to show how definitions of clean water were formed and how they impacted colonial sanitation policy. As I will show there is a significant spatial dynamic in methods of control and resistance. Accounts of resistance also appear in these sources. In British colonial reports, the representation of resistance is biased, and relegates its logic to ignorance.[255] Egyptian elite representations of peasant resistance are also biased, but also more complex and generally less condemnatory.

Cholera in Egypt

Cholera is a bacterial disease that causes massive and violent dehydration. Extreme symptoms can cause death in a matter of hours. Nineteenth-century accounts describe an extreme physical transformation. Bodies wilted, eyes and lips sunk, skin turned blue. Cholera victims suffered extreme leg and stomach cramps, and loss of speech.[256] Uncontrollable vomiting and diarrhea made the disease highly communicable. Caring for a sick person with cholera was a challenge in these circumstances and caring for the sick in

[255] For discussions of the colonial episteme and forms of knowledge, see: Mitchell, *Colonising Egypt*; Bernard Cohn, *Colonialism and its Forms of Knowledge: The British in India* (Princeton: Princeton University Press, 1996). Egyptian elite representations of peasants sometimes repeat similar biases although they are not as blatantly dismissive of resistance efforts.

[256] See: Hamlin, *Cholera,* 1-51 for an overview of symptoms and other details.

Egypt during this time was done at home. Water is implicated in every aspect of cholera – its transmission, prevention, and aspects of its treatment.[257]

In 1883, the epidemic struck hardest and killed anywhere from 50-100,000 people.[258] The British had invaded less than a year prior, and many agencies and institutions were in disarray. By this time, medical research had linked cholera with contaminated water, but miasma theory prevailed in public health policy in the British colonies until the mid-1880s. Supporters of miasma theory were politically motived. If miasmas caused cholera, costly quarantines, water infrastructure modernization, and municipal reform could be avoided.[259]

The British were haphazard in their efforts to contain the disease, and inconsistent in their messaging and methods. They targeted the poorest in cities and villages with sporadic enforcement of extreme measures, such as the destruction of a large area of Bulaq, a suburb of Cairo, by fire in August of 1883.[260] In other cities such as Mansoura, the British colonial

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[257] Standard care for cholera remains rehydration. Antibiotics are also used; a vaccine was developed in the early twentieth century which was dispensed sometimes by force in Egypt during the 1947 epidemic. See: Shousha, "Cholera in Egypt (1947)," 353–81. Vaccines are not generally effective and remain rarely recommended.

[258] "Report on the Cholera Epidemic …1895 & 96," 63, 130. For a contemporary discussion of the mortality rate and official calculations, see: F.M. Sandwith, *Cholera in Egypt* (London: Eyre and Spottiswoode, 1892). Mortality was recorded and reported in government reports and daily in newspapers such as *al-Ahram*. For a history of the nineteenth and twentieth century epidemics, see: Shousha, "Cholera in Egypt," 353–81. For the cholera epidemics in the early and mid nineteenth century in Egypt, see: A. B. Clot-Bey, *Aperçu Général Sur l'Égypte,* (Paris, 1840); LaVerne Kuhnke, *Lives at Risk,* 49-68.

[259] Valeska Huber, "Pandemics and the Politics of Difference: Rewriting the History of Internationalism through Nineteenth-Century Cholera," *Journal of Global History* 15, no. 3 (November 2020): 394–407. Most studies of early nineteenth-century cholera address miasma theory to some extent. For the British focus on miasma theory in the colonies, see Ogawa, "Uneasy Bedfellows," Emma Grunberg, "The Rationality of Inaccurate Science: Britain, Cholera, and the Pursuit of Progress in 1883," *Intersections* 2010, 45; and Arnold, "Cholera and Colonialism."

[260] "Correspondence Respecting the Cholera Epidemic in Egypt: 1883," Commercial 34 (London: House of Commons Parliamentary Papers, 1883), 50.

government imposed quarantines in the form of violent blockades that did not keep cholera from spreading, but caused many to die of other maladies, such as starvation.[261] In Alexandria officials interfered very little. Policies and practices favored European populations in every locality, allowing them to bypass quarantine, and exempting them from sanitation measures. A French national suspected of cholera, for example, was allowed to recuperate at home under the care of a preferred doctor, and any attempt to address the individual about the disease had to be cleared through the appropriate consulate first.[262] Native Egyptians, Ottomans, and migrants from other North African countries were not afforded such civility. Thus, from the very beginning of British occupation, colonial politics inflected cholera policy.

By the 1895 epidemic, the British had rearranged Egyptian health ministries and gutted them of local Egyptian and Ottoman Turkish control. They transferred most senior positions to British officers.[263] Sanitation measures were strict, invasive, and widespread, targeting water sources, streets, entire neighborhoods and villages, and private homes.[264] During the 1902 and 1947 epidemics, invasive sanitation efforts continued, as did resistance to their enforcement. These measures had a cumulative deleterious effect on any trust in the

[261] Ibid, 71-79. There is conflicting information about the epidemic at Mansoura, but there is enough evidence just in these reports to suggest that the quarantine and other sanitary measures caused starvation and kept medical staff from accessing the city.

[262] *Instructions on Procedure in Outbreaks of Cholera* (Cairo: Government Press, 1918). Although published after the three epidemics I discuss in detail in this chapter, this pamphlet includes the most detailed directions I have yet found. The dictates in this pamphlet elaborate on methods discussed in the various 1883 and 1895 reports.

[263] Ismail, "Engineering Metropolis," 38.

[264] "Report on the Epidemic of Cholera in Egypt … 1895 & 1896," 129.

British efforts as well-intentioned or effective.[265] Indeed, as the mortality rate for each subsequent epidemic decreased, resistance to sanitation measures increased, reaching a peak during the 1947 epidemic.[266] This pattern cannot be underestimated, and underscores the value of the significant archive of resistance.

The British knew that proper, comprehensive sanitation infrastructure, particularly proper sewer systems, were the best way to prevent cholera outbreaks. However, colonial policy favored cheaper emergency measures. Indeed, a comprehensive sewer network was not installed in Cairo until 1907.[267] The classification of Egyptian water informed this discourse, policy, and practice. The Nile and its tributaries, the flood and its benefits were debated, studied, and regulated. British assumptions about local water and water practice underscored their beliefs about the epidemiology of cholera in Egypt.

Dirty Water: Critical Visualizations of Disease in 1883

The scientific process of isolating the cholera bacillus, linking it to water contamination, and how this motivated specific sanitation reforms has been discussed elsewhere.[268] For my purposes, I will emphasize that it was a long and complicated process with many false starts and digressions. It was also global in scope, both in terms of geography, and the nationality of medical professionals involved. In Egypt, a key thread

[265] See: Shousha, "Cholera in Egypt," 354, 357. The numbers can vary wildly depending on the source of numbers. As we have seen during the covid pandemic, disease statistics are very difficult to track for a number of reasons. For a discussion on this issue for the 1883 epidemic, see: F.M. Sandwith, *Cholera in Egypt* (London: Eyre and Spottiswoode, 1892); for 1947, see: Gallagher, *Egypt's Other Wars*.

[266] Gallagher, *Egypt's other Wars.*

[267] For an in-depth discussion of this process, see: Ismail, "Engineering Metropolis," especially chapter one.

[268] For some select sources, see note 247 above.

binding British sources is the underlying characterization of Egyptian water and water practice as unclean, even dirty. Officials repeated these claims to superiors, to the British public, and to themselves. Visualizations of cholera contaminated water included thick, affective descriptions, statistics and chemical analyses displayed in neat tables, and drawings of "invisible" biological matter perceptible only through the microscopic lens. Alleging dirty water took on prescient meaning in the context of newly occupied Egypt, a country the British invaded in order to control its waters.

Microscopic drawings are part of the same discourse that made the stereographs discussed in chapter one so popular. They claimed to convey truth, even as they were highly mediated representations. For the British, microbial microscopy reinforced their superior position in the colonial hierarchy. Such images could illuminate secret knowledge about the biological world and be used to control it.[269] In the case of the beginning of the cholera epidemic in 1883, British visualizations of dirty water were key to justifying their initial laissez-faire approach to disease control, and their concurrent "right" to occupy Egypt.

Part of the colonial administration's investigation into the 1883 epidemic was to perform chemical and microscopic analyses of the water at Cairo over the course of July and August, just as the epidemic peaked and began to wane. The report on these experiments

[269] For two contemporary accounts that frame microscopy as the uncovering of a secret, revelatory world, see: Jabez Hogg, *The Microscope: Its History, Construction, and Application, Being a Familiar Introduction to the Use of the Instrument, and the Study of Microscopical Science* (England: G. Routledge & Sons, 1898); William Benjamin Carpenter, *The Microscope and Its Revelations*, (New York: William Wood & Company, 1883). For two studies on the history of microscopy and their role in discovery and building world views, see: Warwick Anderson, "'Where Every Prospect Pleases and Only Man Is Vile': Laboratory Medicine as Colonial Discourse," *Critical Inquiry* 18, no. 3 (1992): 506–29; Catherine Wilson, *The Invisible World: Early Modern Philosophy and the Invention of the Microscope* (Princeton: Princeton University Press, 1995).

includes a series of tables of chemical analyses, statistics, and a series of twelve drawings that showed the gradual disappearance of organic microorganisms as the water of the Nile rose over the course of July due to the annual flood (figs. 3.1-3.3).

The first four drawings depict samples of water taken early in July. They are swimming with diverse types of microscopic matter. Each piece looks like a fraction of something bigger, it is difficult to discern any complete individual organism. Clusters of tiny dots evoke pathogens, and a carapace-like shape in the July 5 sample suggests a small crustacean. In the accompanying report, the analyst explains the objects depicted. The abundant circular objects are green due to chlorophyll and are thus derived from plant matter. There are microscopic crustaceans called daphnia, normally found in ponds rather than the Nile. There are clusters of tiny benign bacteria, but according to the analyst there are no identifiable pathogens present in the water.[270]

And yet, harmless is hardly the message conveyed by the series of carefully circumscribed images. No one wants to drink water full of bacteria, benign or otherwise. The progression of slowly depleting matter to an image of two empty circles is a cautionary tale. The last two circles coincide with the waning of the epidemic, and the rise of the flood. The flood was renowned and celebrated for its rise, which enabled Egypt's ample harvest. But for it to rise it also had to fall, and according to the microscopic imagery this part of the cycle accumulated matter in the water. The images as a group posit a bacteriological view of

[270] Further Reports by Surgeon-General Hunter on the Cholera Epidemic in Egypt [in Continuation of "Commercial No 29 (1883)]," Commercial No 38 (London, 1883),

Egyptian water.[271] They suggest that Egyptian water is dirty and diseased during low Nile, and that this needs to be controlled.

The 1883 and 1895 epidemics of cholera began in Damietta, one of Egypt's port cities located in the Nile Delta. At the time Damietta was a small provincial capital of about 30,000 people. Its population had shrunk significantly after the cholera epidemics of the 1850s, and endemic bovine typhus, among other maladies. Nevertheless, Damietta was a textile manufacturing center. Its factories employed and served the local community.[272] The city also had a reputation for producing fine wood furniture and baskets (fig. 3.4). Damietta was a provincial trading hub, connected to other local ports such as Port Said, Alexandria and Rosetta. Like most Egyptian cities, Nile water flowed into Damietta and its hinterland via canals. The Nile and these canals served as the main potable water source of the town. Like at Cairo, Damietta's elite favored the views and climatic benefits of living close to the water (fig. 3.5). [273] The city's most famous pilgrimage site, the Fatimid-era Mosque of Abu-l-Ma'ati sat near a canal that encircled the city (fig. 3.6).

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[271] Gandy, "Bacteriological City;" Christopher Hamlin, *A Science of Impurity: Water Analysis in Nineteenth Century Britain* (Berkeley: University of California Press, 1990); Matthew Evenden, "Debating Water Purity and Expertise: The Chlorination Controversy in Vancouver during the Second World War," *Journal of Historical Geography* 65 (2019): 85–9. For some examples on the formulation of laboratory science and public hygiene in Europe see: Andrew Cunningham and Perry Williams, *The Laboratory Revolution in Medicine* (Cambridge: Cambridge University Press, 1992); David Barnes, *The Great Stink of Paris and the Nineteenth-Century Struggle against Filth and Germs* (Baltimore: Johns Hopkins University Press, 2006).

[272] Tucker, *Women in Egypt*, 24.

[273] "Further Reports Respecting the Cholera Epidemic in Egypt and the Proceedings of the German Scientific Commission," Commercial No 34 (London: House of Commons Parliamentary Papers, 1884), 27.

After cholera broke out in Damietta at the end of June in 1883, a series of commissions were dispatched to investigate. One of these was composed of British colonial medical doctors, including an official named John Simpson, who had previously served in a sanitation role in India. His report titled "Some Notes on the Cholera at Damietta" is lurid and packed with boisterous rhetorical verve. Despite being certain that miasmas cause cholera, he is equally confident that the water practices of the local population are to blame. His negative affective tone leaves no doubt to his opinion. He describes Damietta's water throughout his report as acrid, thick, even aspirating. "Green pools with gases bubbling up from them are seen in every part of the town. To me they were a source of anxiety, for I felt that I might be laid down with some malignant fever at any moment." Other descriptions seem to aim to prove that the people of Damietta revel in dirty water: "…it was amusing to see the Arab children take off their scanty clothing, enter the puddles in the street, play, bathe, and roll in them, and come out covered from head to food in a coating of mud and mire.[274]

Simpson seems eager to establish a clear visible reason for cholera at Damietta in the form of dirty water. More than this, however, he claims that the residents of Damietta have little respect for water, contaminating the Nile and its canals with rotting bovine carcasses to save money and because it was easier than burying them.

> [Officials] took out 400 putrid carcasses in one week, most of which were in the vicinity of Damietta, and most of them were in such a decomposed condition as to make it impossible to drag them out of the river except in pieces. The work was of an intensely offensive and sickening nature…as they gradually accumulated they created a pestilential state…in the water.[275]

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[274] Ibid, 27. For analysis of foreign writers equating Egyptians with mud, see: Fahmy, "For Cavafy," especially 264-266.

[275] "Further Reports … German Scientific Commission," 30.

According to Simpson, Damiettans do not know mud from clean water, they contaminate their source on purpose, and thus there is little hope for them. The town of Damietta and its residents in his view are the inverse of modern sanitation. His graphic descriptions are vivid and damning, and aim to present the situation as doomed, even inevitable. Simpson's thoughts on the situation can be surmised as: "whatever may have been the origin of cholera at Damietta, there is little doubt its rapid spread was mainly due to the defilement of the water."[276]

Simpson's report is an extreme example of the British construct of colonial hygiene in Egypt in 1883. Others held more subtle views and were vocally frustrated with the lack of resources to implement systemic change, especially as the years progressed. But sympathetic views were invariably hamstrung by the author's position in the colonial hierarchy, and diatribes against constrained budgets virtually always claim that reform is useless until the people change their "filthy" habits.[277]

Tepid Accord: Egyptian Elites and Cholera (1883-1902)

Even as the British presented Egyptians and their water practices as ignorant, they were simultaneously relying on their resources, local knowledge, expertise, and labor. Educated Egyptian and Ottoman locals formed an important part of the infrastructure of cholera management, as doctors, lab analysists, police officers, and support staff. They were

[276] Ibid.

[277] Certainly, there may be exceptions, but in my research, I have not come across any that resist this pull entirely. Two examples of ardent British critics of the colonial government's sanitation policies are: F.M. Sandwith and J.A.S. Grant. Both wrote scathing indictments of British inaction, but also see the British and Europe as superior in sanitation and that it is their duty to disseminate this knowledge to those in the colonies.

also scientists and concerned residents, educated on the latest in medical advances and sanitation practices.

Local intellectuals and medical professionals found themselves in a perplexing position in this situation, especially during the 1895/6 and 1902 epidemics. They believed in "modern" sanitation and participated in the development and dissemination of its methods. But proper sanitation had always been an important part of Egyptian and Ottoman culture. The framing of sanitation as a modern (western) idea was partly a matter of scale, but mostly a social construct created to differentiate Egyptians (and other peoples outside Europe) from the colonizer. Thus, local elites played an important and complicated role in the dissemination, enforcement, and public criticism of British colonial practices. As a group, they supported the science and the goals, but not *necessarily* the methods or manner of implementation.[278]

Another commission was sent to Damietta in 1883 by Hassan Mahmoud, the President of the Maritime Health and Quarantine Board. The leaders of this commission, medical doctors Ahmet Chaffey and Salvatore Ferrari describe the results of their investigation in a 25-page pamphlet titled *Le Cholera de Damiette en 1883: Origine et Développement*.[279] They argue that the evidence concerning the cause of cholera is inconclusive and may have been due to the confluence of hot, humid weather (miasmas) and

[278] Individual efforts and opinions differed. There was no single opinion about the British, modern sanitation, and the way Egyptians participated in these efforts.

[279] Ahmet Chaffey Bey and Salvatore Ferrari, *Le Choléra de Damiette en 1883: origine et développement. Rapport adressé au conseil sanitaire, maritime et quarantenaire d'Égypte* (Alexandria, Egypt: Typo-Lythographie V. Penasson, 1883). Excerpts of this report were included in several of the British ad hoc reports and correspondence records, including: "Correspondence Respecting Cholera … 1883," 49-52 and "Further Reports by Surgeon-General Hunter," 20-30.

a festival that drew about fifteen thousand people to the city, the mawlid (saint's birthday) of Abul Ma'ati.[280] Their method is comprehensive, including fieldwork, chemical analysis of the water, a survey of the town, interviewing doctors and caregivers, and an examination of local cholera victims. They come to similar conclusions as Simpson in the sense that they believe the sanitation situation of the town is a problem and aided the quick spread of cholera. They note standing water in houses, narrow damp lanes, many ruined structures used as dumping grounds, and not enough lavatories and other infrastructure to support the crowds at the mawlid.

Chaffey and Ferrari are clear, however, to mention the issue of *uneven, clean* water access during low Nile.

> The only drink consumed by the inhabitants [of Damietta] is water. The rich save their water for seven months in a cistern, replenished by water from the Nile during the flood. But the inhabitants who do not have a cistern drink water from the river or the canal all year long.[281]

This is different than Simpson's description, for example, which posits all inhabitants of the same habits, regardless of resources.

Members of Chaffey and Ferrari's commission gathered water from Damietta and sent it to the laboratory at the medical school of Qasr al-Ayni in Cairo. The analyst, Ibrahim Mustapha, describes his process in detail, including the unpacking of the material: "The water was contained in…glass bottles…I opened the four bottles and found that the water was not clear…" Mustapha's conclusions are that: "…seeing that one of the essential conditions for water to be fit to drink is that 'it should be free from organic matter capable of

[280] Chaffey and Ferrari, *Le Choléra de Damiette,* especially 1-5.

[281] Ibid, 4.

putrefying,' I think that I may fairly conclude that the water submitted to examination is unfit for public use."[282]

Mustapha, Chaffey and Ferrari do not moralize the situation, or attempt to blame anyone in particular. The problem is systemic, and comprehensive sanitation reform is necessary. They are quite clear that these considerations should be prioritized, and also not entangled with other reforms that the government is pursuing:

> We conclude with a sincere wish that the immediate future will profit from the experience of the past to avoid fresh suffering. And that Egypt, prior to reforming its social and political institutions, will commence with that which is the basis of everything: *Hygiene.*[283]

Chaffey and Ferrari clearly disagree with Simpson that the situation at Damietta is hopeless or due to ignorance. They exhibit a more complex understanding of urban water infrastructure, resource management, and the role of government in aiding those most vulnerable.

Egyptian intellectuals also tended to see the flood cycle as a boon to public health rather than a variable to be controlled. They did not blame the flood cycle itself for the spread of disease, but rather considered its rise a natural cure. In a 12-page pamphlet published in 1893 titled: *L'Extinction du cholera par la Nouktah,* Dr. Saleh Soubhy, Cairo's Public Health Inspector, emphasizes the role of the Nile flood in curbing epidemic disease.[284] His conclusions largely align with miasma theory, as he argues the increase in

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[282] Ibid, appendix 2. An English translation of the examination is included in: "Further Reports by Surgeon-General Hunter," 30.

[283] Chaffey and Ferrari, *Cholera en Damiette*, 18. The emphasis is retained in the original text as L'Hygiene, and can also be translated as public health or sanitation.

[284] Saleh Soubhy, *De l'extinction du cholera par la nouktah* (Cairo: Imprimerie Nationale, 1893). *Al-Ahram* published almost daily articles on personal sanitation tips during the 1883 epidemic, especially during July of that year. Some specific articles will be reviewed below. Such articles continued to be published well into the 1902 epidemic in

water cleans and cools the air, but he celebrates the correlation of an increase in fresh water and the decrease of epidemic disease:

> The vitality of the flood water, this physical force conceived by Providence to transform old water into new potable water and to extinguish the languid heat of the earth which can, during an epidemic, favor the development of infectious disease.[285]

Public Health officials agreed that low Nile had its challenges. More often than their British or French counterparts, Egyptians officials tended to offer concrete solutions to managing the cycle that preserved the positive and cultural aspects of the current system, such as Ali Mubarak's maintenance scheme for the Khalig mentioned in chapter two.

There was a robust public discourse in Arabic-language popular press and periodicals on cholera, water, hygiene, and public health. These appeared both during and outside of times of crises.[286] Magazines such as *al-Muqtataf* and *Tabib al-A'ila* routinely printed images alongside carefully researched articles on the latest advances in science for their readership (fig. 3.7). [287] The images complimented the articles and were often

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numerous periodicals. For example: "Nisa'ih Mufida mudda Waba' al-Kulira," *al-Mu'ayyad* (July 28, 1902): 2. *Al-Mu'ayyad* was a popular daily newspaper that ran for about twenty five years from 1889-1914.

[285] Soubhy, *De l'Extinction du cholera*, 6

[286] For example, "Al-Hawa al-Asfar wa-ilajuh," *Al-Muqtataf* 7, no. 12 (May 1883): 757–59. This article was written right before news of the 1883 outbreak hit; a footnote on the first page indicates that news had just reached the journal staff of new cholera cases at Damietta. *Al-Muqtataf* was a monthly popular science and culture magazine geared towards the intellectual elite of the Arabic-speaking world, especially Egypt and Lebanon. It ran for 76 years.

[287] "Kalam al-Duktur Kukh fi al-Hawa' al-Asfar," *Al-Muqtataf* 9, no. 2 (1884): 60–76. This is largely a translation of an article from *The Lancet*, as described in the beginning paragraph. Ismail Shehab has also discussed the role of science magazines in fostering public health discourse. See "Engineering Metropolis," especially chapter one. His discussion delves further into additional significant periodicals of the time, and biographical information on some of their founders.

annotated to emphasize key points. *Al-Muqtataf* especially was a preeminent venue for the discussion and dissemination of scientific research, as well as more practical tips and advice.[288]

Egyptian and foreign elites shared the belief that sanitation in the home was a critical method to fight cholera.[289] A growing literature over the course of the late nineteenth and early twentieth centuries provided advice on the prevention of any number of maladies including cholera through diligent personal sanitation practices. These included hand washing, avoiding certain foods, home water filtering and purification, and avoiding stagnant air and crowded areas. Authors advised concerned individuals to pay special attention to the entire home, including regularly cleaning dishes and water containers, furniture, bedding and clothing. Air circulation in the house was also important, as was the proper type of air (dry, cool) for the sick. A*l-Muqtataf* editors prided themselves on publishing local and global research and perspectives, including the contributions of Egyptians.[290] In the pages of magazines, advice melded traditional water purification practices along with the latest research and advances in personal sanitation technology.[291]

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[288] For the role of *al-Muqtataf* in scientific discourse, see: Marwa Elshakry, *Reading Darwin in Arabic, 1860-1950* (Chicago: University of Chicago Press, 2014).

[289] "Nasa'ih did al-Hida," *al-Ahram* (July 11, 1883): 1; "Nasa'ih Mufida fi Ayam al-Huwa' al-Asfar," *al-Ahram* (July 2, 1883): 1. In the latter article, the author specifically addresses the family: "kul al-a'ila" as responsible for preventing the spread of cholera. Also see: Alfred Eid, "al-Wiqaya min al-Kulira," *Tabib al-A'ila*, (November 15, 1895): 7-10. This article talks about recent research, including strong evidence that unclean water was the cause or source.

[290] "Al-Tawqi min al-Kulira," *Al-Muqtataf* 10, 1 (October 1885): 48; "Al-Kulira aw al-Huwa' al-Asfar," *Al-Muqtataf* 9, 11 (August 1885), 246.

[291] Shehab Ismail provides an excellent discussion of traditional methods of water purification and how they were incorporated with modern techniques and sensibilities. See: Ismail, "Engineering Metropolis," especially chapter 3. Later advertisements begin to employ images of dirty water to sell products. See ibid, page 161 for an example from *al-*

Egyptian experts were an important part of cholera research, sanitation efforts, and treatment of the disease. They also aimed to address the systemic sanitation issues that exacerbated its spread, even as comprehensive sanitation reform remained out of reach. The British colonial government favored emergency sanitation measures that started first and foremost with the control of water and led to forced entry into the home. Egyptians debated the efficacy of these methods, as well as served important roles in enforcing them.

Controlling Water (1895/6 and 1902)

The British colonial government focused its attention on water infrastructure in the hinterland. Most of the Egyptian colonial budget was dedicated to agricultural canal maintenance as well as barrage and dam building.[292] The effects of these changes have been discussed elsewhere, but for my purposes I will emphasize that this focus impacted how they approached water control in the cities epistemically: Egyptian water, including the flood, was to be controlled.[293]

Officials used several methods to discourage and prohibit people from pulling water from the Nile and its canals during the cholera epidemics, such as distributing pamphlets condemning the practice as dangerous, and providing filtered water from some corporate

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Mu'ayyad from 1900. For the convergence of cleanliness, whiteness and women's products in advertisements see: Mona Russell, "Marketing the Modern Egyptian Girl: Whitewashing Soap and Clothes from the Late Nineteenth Century to 1936," *Journal of Middle East Women's Studies* 6, no. 3 (2010): 19–57.

[292] This does not mean that infrastructure modernization and maintenance was evenly distributed in the countryside. Projects were prioritized to increase profits. Many people and communities were ignored. For one fascinating discussion of how this was received, see: Abul-Magd, "Rebellion in the Time of Cholera," 691–719.

[293]Derr, The *Lived Nile* and idem, "The Damned Body."

water taps for free.[294] They policed water carriers to keep an eye on what type of water they carried. The Alexandria municipality required water carriers to register and always wear a registration number. These badges were distinct colors for water carriers that pulled water from the Alexandria Water Company taps, and those that pulled it from other sources such as the Mahmudiya Canal. Failure to comply with any regulation ran the risk of penalties, including fines and potentially prison if the fine could not be paid.[295] Water carriers at both Cairo and Alexandria were also required to have their skins regularly disinfected by the sanitation authority.[296]

In Cairo, sanitation officials erected barriers at popular access points to the Nile and the Khalig al-Masri to deter professional water carriers and the public. Sources indicate the primary reason for surveillance was to prevent people from washing their clothing or dumping waste or other matter into the water.[297] One account of the 1902 epidemic at Alexandria stated: "The whole bank of [the Mahmudiya] Canal was lined throughout with guards…to prevent the people from going near it."[298] Staircases, banks, and informal

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[294] It is important to note that these did not remain free. These were temporary measures, and water carriers were always charged. See chapter one for images of corporate water taps.

[295]Municipalité d'Alexandrie, *Lois, décrets, arrêtés et règlements intéressant la municipalité d'Alexandrie*, vol. 2 (Alexandria: Imprimerie Générale A Mourès & Cie, 1906), 352 indicates that penalties could be imposed by both the mixed and native courts for these infractions. Infractions are indicated as within codes 341-351 in the Native Penal Code, which indicates a fine to be decided by the judge, befitting the crime, and the person's economic status. See: J. Grandmoulin, *Le Droit Pénal Égyptien Indigène* (Le Caire: Imprimerie Nationale, 1908), 201-205.

[296] *Instructions on Procedure in Outbreaks of Cholera*, 52; 89.

[297] Ibid, 52; "Al-Asima," *al-Ahram* (May 19, 1896): 2; Municipalité d'Alexandrie, *Lois décrets*, vol 2, 352-3.

[298] "The Outbreak of Cholera in Egypt," *British Medical Journal* 2, no. 2180 (October 11, 1902): 1177. The article also mentions the installation of wells and pumps to replace this source, a strategy I will return to below.

landings were closed, and a police officer stood at landings to monitor methods of pulling and using water. *Gaffirs* (watchmen) were employed by the Public Works Department at barriers to closed landings to deter unauthorized use.[299]

Officials designed and constructed floating platforms at official potable water pulling sites (figs. 3.8-3.9). A plan shows a rectangular platform constructed out of a layer of wood beams (C) on a frame (B). Planks are placed across the beams forming a 2x3 meter platform from which to pull water. Four posts sunk into the bank secure the platform to the ground. The posts and platform are placed out into the stream past the shoreline. An inclined gangway connects the platform to dry land, bypassing the foreshore. As the photograph of one such platform at Bulaq shows, such landings turned the process of gathering water into a tightly surveilled line, not unlike the lines for taps emerging elsewhere in Cairo at the same time (fig. 3.8, 1.38). Water carriers crowd onto the landing with their goatskin sacks, a tightly packed queue. Such design would allow a watchman to ascertain whether a water carrier was properly registered, or to inspect their goatskin bags. The process of collecting water at such a platform could easily become a confrontation with the police, with the state and its water regulations.

During all four epidemics, the sanitation authority in urban and rural areas closed public sabils and destroyed zirs.[300] They deemed them unsanitary and claimed that they

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[299] "Correspondence Respecting Cholera … 1883," 23; "Report on the Epidemic of Cholera … 1895 & 1896," 64; Municipalité d'Alexandrie *Lois, Décrets*, vol 1, 75; Majlis al-Nuzzar, "Nizarat Al-Dakhaliya," *Majmu'at al-Qararat wa-l-Manshurat* (October, 1895): 596–99; *Instructions on Procedure in Outbreaks of Cholera*, 44-46. Ismail also discusses comprehensive methods of controlling access to canal banks. See: "Engineering Metropolis," especially chapter 3.

[300] "Report on the Epidemic of Cholera … 1895 & 1896," 14. The destruction of zirs was explicitly linked to driving people to use taps.

circumvented "clean" corporate taps and government-installed Abyssinian wells.[301] In addition, officials often closed public latrines housed in mosques until the proprietors could drain and sanitize them with lime. In the town of al-Manzala, on the south side of the lake of the same name, officials designated the mosque latrines as a source of infection and closed them.[302] Officials drew a map to show how the latrines connected directly to the water (fig. 3.10). The image aims to justify the actions, to convince the reader that the logic is simple, visible, and clear. Yet it leaves out several key details. Which direction does the current run? How wide and how deep is the canal? Do the latrines dump into a cesspit that is opened at a specific time of the year, as was customary in Cairo, or is there a different method? The key problem with this plan and the accompanying report, however, is that neither suggest the prompt installation of alternate nearby facilities.[303] There seems to be little concern about where the people will relieve themselves otherwise. This is a particularly egregious example of the paradox of emergency sanitation measures. They could replicate or even exacerbate underlying issues of clean water access and make sanitation conditions worse. This was not lost on the public. People at al-Manzala responded by evading the sanitation authority, and actively resisting their efforts to track cases of cholera.[304]

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[301] An Abyssinian well is a narrow, deeply-bored metal well with a hand-powered pump at the top.

[302] "Report on the Epidemic of Cholera … 1895 & 1896," 20-21.

[303] There are numerous examples. For one, see: "Report on the Cholera Epidemic … 1895 & 6," 20-21. Officials claimed to be deeply concerned about mosque sanitation. They were also constantly frustrated by the obstruction of the Ministry of Waqf in their pursuit of closing latrines, ablutions fountains, and immersion pools. The stakes of this particular obsession with mosque sanitation deserves further in-depth research, especially as mosques, as discussed briefly in chapter one, were keen to spend resources and money on water and making sure water infrastructure was clean.

[304] "Report on the Epidemic of Cholera … 1895 & 1896," 20.

In Cairo, officials targeted ponds, lakes, and especially the Khalig al-Masri as potential sources of disease. As discussed in chapter two, an outbreak of cases in homes along the Khalig encouraged colonial officials to temporarily close it in July 1895. They drained the water and disinfected it with lime: "The disinfection produced one excellent result, in that the people believing that the water was being poisoned by the Sanitary Department, refrained from using it. The end was thus attained."[305] Although the official who wrote these words sees people's aversion to the Khalig as a positive outcome, the belief that the British were poisoning water was a powerful rumor that spread well beyond the confines of canals. Such rumors morphed into other rumors, scaffolded by the underlying truth of the public's belief in and observance of the government's violence and cruelty. One incident reported during the 1883 epidemic is illustrative:

> …within the last ten days there has been evinced a very bad state of feeling on the part of the…native population. Reports have been spread among them, and too generally believed, not only that the English have introduced the cholera, but that the disinfectants, remedies, and even food given by the Sanitary Commission are poisonous. …while the medical delegation was with the Governor, a well-dressed Arab belonging to the superior classes brought in two common English biscuits, which he said had been given to his child by a Christian, and which he wished to have analysed. He seemed hardly satisfied at seeing the biscuits eaten by two members of the delegation.[306]

In this case, a man directly confronts the "medical delegation" and accuses them of a conspiracy. Not only is cholera caused by the British, but anything they provide is poison. The man is convinced primarily that the state lies, and that it wants something other than to

[305] Ibid, 58.

[306] "Correspondence Respecting Cholera … 1883," 28. I suspect the reference to the man begin a Christian is a red herring, and may have been an Arabic term "ifrang" to refer to the French or foreigners in general. There were plenty of Coptic Christians in Egypt, especially Cairo, and I have come across no evidence they were blamed for the spread of the disease or suspected of aiding the British in poisoning the population.

control cholera. The demand to have the biscuit chemically analyzed speaks to his awareness of current trends in science and shows that he believes them valid and potentially useful to prove his case.[307] Unsurprisingly, his confrontation does not persuade either party. The British officer cannot convince the man that the biscuit is safe, and the man cannot convince the officer that it is poison – or rather that he is right to suspect that such a thing is entirely possible. Such instances were not isolated and were not resolved at the end of the 1883 epidemic. Very similar rumors emerged again in the 1895/6 and 1902 epidemics.[308]

Egyptians were engaged in front-line cholera treatment, sanitation and water control efforts. During the 1902 cholera epidemic, renowned Egyptian doctor Nagib Mahfuz was a nineteen-year-old medical student at Qasr al-Ayni Medical School.[309] Mahfuz offered to go to Musha to fight cholera, the Upper Egyptian town where the epidemic had begun and continued to rage. According to Mahfuz's memoirs, the British officer in charge at Musha, Dr. Goodman, orders Mahfuz to draw a map of the village, marking the location of homes of confirmed and suspected cholera patients, and the location of wells. Goodman offers Mahfuz six policemen to accompany him in this task. Mahfuz refuses, preferring to take the

[307] For more on the study of science in Egypt, see: Elshakry, *Reading Darwin in Arabic, 1860-1950*.

[308] For example: *al-Ahram* (May 21, 1896): 2; *al-Ahram* (June 2, 1896): 2; *al-Ahram* (June 5, 1896): 2. The latter is a very detailed discussion of an incident on June 2 in which students resisted the removal of an ill student from al-Azhar. The incident ended in the government firing on the students, killing two and wounding at least seven.

[309] Not to be confused with Nagib Mahfuz the Nobel-prize winning novelist. Nagib Pasha Mahfuz was considered to be Egypt's father of modern obstetrics and gynecology. For more on his career and how he fit into medical education in Egypt, see: Abugideiri, *Gender and the Making of Modern Medicine*, chapter 6. For this chapter, I used the original Arabic text and the English translation. I used the published English translation for my quotes. See: Nagib Mahfuz, *Hayat Tabib* (al-Qahira: Dar al-Ma'arif, 1966); Nagib Mahfuz, *The Life of an Egyptian Doctor* (Edinburgh: E. & S. Livingstone, 1966).

deputy *umdah* (deputy mayor) as he believes a familiar face might help the people trust him. The deputy umdah, however, also believes Mahfuz foolish to refuse a police escort, despite agreeing to accompany him on his tasks nonetheless.[310]

Mahfuz approaches the community at Friday prayer with permission from the imam:

> I…addressed the crowd in a short speech, which I delivered in the colloquial Upper Egyptian dialect, regarding the nature of my mission. I told them that cholera, which had reaped the lives of a great number of men, women, and children, was caused by drinking polluted well water contaminated by invisible poisonous germs. I explained how these germs caused vomiting and diarrhea and destroyed life in a few days. I also explained how easy it was to get rid of these germs by disinfecting the wells…there are still a few…hidden by their owners for fear that they will be destroyed. This is quite wrong. I assured them that the Government would supply new wells whose water would not be contaminated and would pay them lavishly for the old ones. As soon as this was accomplished the epidemic would come to an end. I wound up saying, 'I am a young man, under twenty, and I have volunteered to serve you paying no attention to the danger to which I will be exposed. All I ask of you is to help me to carry out my mission.'[311]

Mahfuz attempts to be transparent and direct; he appeals to the people in person at their community center, explaining his goal, methods, and the desired outcome. Mahfuz describes cholera as invisible germs, literally insects (*hasharat*) that live in the water, a visually evocative detail that he perhaps hopes will persuade the people to stop using the wells.[312] However, there is no indication in Mahfuz's text that this speech encouraged

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[310] An umdah is like a mayor, or the head of a village. In the British archive on cholera they hold a dubious position as troublemakers and are blamed for spreading rumors to sabotage sanitation efforts.

[311] Mahfuz, *Life of an Egyptian Doctor*, 42-43.

[312] The Arabic word hashara, pl. hasharat directly translates as harmful insect pests, such as locusts. In popular and medical literature, other terms such as microbe (ميكروب) and germ (جرثومة) are much more common. This may represent Mahfuz attempting to talk to peasants in a way he thinks they will understand, but I am not familiar enough with popular medical practice during this time to be sure. For the account in Arabic, see: Mahfuz, *Hayat Tabib*, 75.

people to stop drinking their well water, reveal the location of their wells, or to otherwise help him in any way. Like other sanitation officials, Mahfuz had to make do on his own.

After completing the map, which was difficult "because many of the back streets were blocked in the centre by a house and one had to reach the remainder of the lane by climbing over the roofs of these houses,"[313] Mahfuz began to look for the concealed wells:

> The villagers used to hide their wells by putting boards of wood across their mouths and then covering these with old mats and earth in such a manner that no one would suspect their existence. My method of discovering these hidden wells was to knock the whole floor of the courtyard with a big club lent to me by the deputy Omdah who accompanied me on these visits. If the sound was resonant I suspected the presence of a well and ordered the floor to be dug out.[314]

Mahfuz's process of mapping and uncovering concealed wells is thoroughly invasive. He climbs over walls, into courtyards, bangs on the floor, and then digs it up to reveal hidden water sources. Mahfuz marks the location of each well discovered on his accompanying map and gives it to the sanitation authority. However, he claims that only one well was permanently closed after its water tested positive for cholera bacteria.

Mahfuz visited several other sites during the 1902 epidemic, locating, disinfecting, filling, and digging new wells. At Alexandria: "I disinfected the old wells and placed guards to prevent the inhabitants drawing water from them. The water pumped from the new wells was quite sufficient for the people's needs." Mahfuz reveals that he is aware that people are reluctant to use the new wells installed by himself and other sanitation authorities. The same problem existed in 1895, when officials reported that "people would not willingly use them

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[313] Mahfuz, *Life of an Egyptian Doctor,* 43. There are many textual references to such maps, but I have not been able to find any examples of cholera maps of this sort in the sources currently available to me. For an example of a map of plague cases from Alexandria in 1899, see: A. Valassopoulo, *La Peste d'Alexandrie en 1899 au point de vue clinique, épidémiologique, etc* (Paris: A. Maloine, 1901), 10-11.

[314] Mahfuz, *Life of an Egyptian Doctor,* 43.

(the wells) as they believed them to be poisoned by the Sanitary Officials…"[315] Mahfuz is not, however, prone to opining on the reasons for people's resistance to the wells. Neither does he condemn the actions of the people in concealing their water. Like Chaffey and Ferrari before him, Mahfuz is focused on addressing and fixing the primary cause of the disease, in this case infected wells. He is also aware of his status as an outsider and attempts to mitigate that fact with the presence of the umdah and by approaching the people at the mosque.

Following Water into the Home: Invasive Sanitation Measures to Control "Cholera" 1883 and 1895/6

It became clear early in the 1883 epidemic that most people would not willingly submit themselves to invasive cholera sanitation procedures. Thus, officials devised several tactics to discover cases. The search began in the street. Reports in *al-Ahram* during the cholera epidemics of 1895/6 describe police and the army patrolling the streets day and night, looking for any indication of cholera sufferers.[316] Officials offered a cash reward to informants willing to report neighbors who were concealing cholera.[317]

Once sanitation officials discovered a person afflicted with cholera, they inspected and sanitized their dwelling. If the house was made of temporary materials or deemed too unsanitary, it might be destroyed. Otherwise, a sanitation crew entered and followed a set of specific procedures. Members of the crew cleaned and disinfected all cups and water containers. Any container made from unsealed clay was likely destroyed. Other measures

[315] "Report on the Epidemic of Cholera … 1895 & 1896," 73.

[316] *Al-Ahram* (June 2, 1896): 2; *al-Ahram* (June 8, 1896): 1.

[317] *Instructions on Procedure in Outbreaks of Cholera,* 20.

included disinfecting furniture, bedding, and all kitchen items with sublimate or lime solutions.[318] There were special measures for managing the sick room. Officials destroyed all liquid containers, and the mattress or mat and any bedding or linens. The walls "up to two meters" were washed and disinfected.

If a house was big enough and deemed sanitary, in other words if the patient was rich, important, or well connected, they might be allowed to convalesce at home. If sanitation was required, residents would be forced to leave the house and the cholera patient would likely be sent to a hospital. Rumors about cholera hospitals were especially bleak and virulent. People claimed that cholera patients would first be incapacitated with chloroform on a yellow handkerchief. At the hospital they would be left to die with no care, family members were not allowed to see them, nor were they even informed where the patient was taken. If the patient died (and rumors posited this was the inevitable outcome) the body would be dissected, studied, and buried without the proper rituals. Family members would not be informed, and there would be no funeral. The body would be placed in a metal coffin in an unmarked grave.[319]

Outbreaks of cholera in Cairo and Alexandria required the construction of temporary cholera hospitals or camps to manage the sick (fig. 3.11). Instructions for a plan of such a temporary camp separates convalescents, patients, and suspects, disinfecting stations, and hospital attendants into a linear arrangement. There are separate tents for the male (*tamargi*) and female (*tamargiya*) hospital attendants. Each section has three to nine square or round

[318] *Instructions on Procedure in Outbreaks of Cholera*, 52-58.

[319] Hospital rumors were the major reason for the al-Azhar incident. See: *al-Ahram* (June 2, 1896): 2; *al-Ahram* (June 5, 1896): 2; "Hadithat al-Azhar," *al-Muqtataf* (July 1, 1896): 558-559.

temporary structures or tents. These are placed in the middle of each section. Structures within each section are about 4 x 5 meters in size. They are placed anywhere from six to 20 meters apart. The camp is fenced off and guards are stationed in a tent at the entrance, at the top of this plan. Confirmed cholera patients and convalescents are placed farthest from the guards, near the mortuary, and feces pit, on the bottom of this plan. Suspected cholera patients are placed in the middle of the camp. Next to them are two disinfecting stations, one for linens and clothes and another for discharged patients. In the middle of these disinfecting stations is a kitchen. The hospital attendant's quarters and a store are located closest to the entrance. Most sections have their own latrines.

The linear plan aims to impose order on managing extremely epidemic disease, to separate and control patients with the least amount of direct surveillance. It classes people in terms of virulence and risk, placing those most ill at the back, farthest from the only entrance to the camp. Should they die, they are also close to the mortuary. However, there are few details in the procedures or the plan about the number of patients per tent, how many guards or attendants, and the process of classifying patients. From the plan it is also likely that the removal of bodies and waste was a public affair, as there is no back entrance to move them out of the camp surreptitiously. One entrance bottlenecks the process of movement in and out of the camp, meaning the sick and the well pass through the same spaces, along the same path. This must be so in order with a single entrance, to maintain tight control over the camp. It turns ostensibly therapeutic spaces into landscapes of control, similar in design and modality to prisons, slave quarters, and insane asylums. [320]

[320] The linear plan was considered to be orderly and logical, although it had many limitations, and informal adaptions were the rule. For asylums, see: Carla Yanni, *The Architecture of Madness: Insane Asylums in the United States* (Minneapolis: University of

Photographs and descriptions of such hospital camps are rare. One example from 1895/6 shows such an example at Old Cairo, a suburb hit particularly hard during each epidemic (fig. 3.12). The camp is surrounded by high stone or brick walls, suggesting the camp was placed in the center of retrofitted ruins. The camp is composed of large windowless wooden structures with pitched roofs. A figure in white, perhaps a medical attendant, stands at the large entrance to one of them. Another image from Mosul Iraq of a cholera camp at the turn of the twentieth century is basically a crowd of tents, no fencing or guards are visible (fig. 3.13). In other places such as Tripoli during the 1911 epidemic, the Italian colonial government converted hotels and other structures to hold cholera patients. There are a handful of photographs of these camps at the Bibliothèque Nationale and they depict shocking, inhumane conditions.[321] In Andrée Chadid's novel, *Le Sixième Jour*, an account of the cholera hospital camps during the 1947 epidemic is one of the primary reasons that the main character, Saddika, is so intent to hide her grandson from the sanitation authorities when he is stricken with the disease. According to Saddika's nephew, Saleh:

> "The hospital is the worst! The ambulance arrived, the attendants forced their way into the house, burning our things and taking our sick."
> "Where do they take them?"
> "They never say. I found out in the end where they took my father and brother: tents in the middle of the desert. They chased us, my mother and I away with sticks, but we returned, calling the names of our loved ones so they would not think we had abandoned them. I made my way into one of the tents, it was horrible! The same face everywhere: blue, hollow, tongue hanging out. The patients lie next to each other in the sand, vomiting, two already dead and left there…A nurse came in wearing boots

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Minnesota Press, 2007); for plantation spaces, see: Catherine W Bishir, "Urban Slavery at Work: The Bellamy Mansion Compound, Wilmington, North Carolina," *Buildings & Landscapes* 17, no. 2 (2010): 13–32; for prisons, see: Mira Rai Waits, "Imperial Vision, Colonial Prisons," *Journal of the Society of Architectural Historians* 77, no. 2 (2018): 146–67; for city planning and the grid, see: Upton, *Another City*, especially part two.

[321] I have chosen not to reproduce or describe these images in detail in this dissertation as a matter of respect. For one example: Tripoli, cadavres de cholériques, 1911, Bibliothèque nationale de France, Départment estampes et photographie, EI-12 (122).

> and a mask, he pushed me out before I could find my people…Never will I forget, since then we've hidden our sick and our dead!"[322]

In the press people debated the reasonableness of people's resistance. *Al-Ahram* published different opinions. A long article from June 1896 thoroughly supported sanitation efforts, and saw resistance as largely limited to the poorer classes. The author considers compliance or resistance in essentialist terms, as a binary between those who understand proper sanitation and respect the law, and those who are ignorant and are criminals. The author notes that rumors about ill treatment and poisoning are perpetrated by peasants and children and "spread like lightning."[323] Still others were vocally sympathetic of resistance efforts. One letter published in the newspaper from a reader in Damanhur titled "The Epidemic and Doctors" blames doctors specifically for causing distrust in the local population. The author draws a distinction between small towns and the cities, noting that provincial doctors do not respect their patients, causing distrust and resentment: "If a patient arrives at the clinic, the doctor ridicules him for how he lives, scorns his dress, and insults his people... He does not respect the patient at all, does not sympathize or offer a calming word."[324]

Despite the debate in newspapers and magazines, accounts of resistance show that sanitation measures were enforced across classes, and many, poor or otherwise, resisted.

> [One] curious incident occurred when inquiry was made of a respectable man about his wife, who had died of cholera. First he said his wife died at a friend's house; a few moments after he declared she had died at home, and possibly thinking he had been too definite, he finally remarked he really could not remember.[325]

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[322] Andrée Chedid, *Le Sixième jour* (Paris: Flammarion, 1986), 12-14.

[323] *Al-Ahram* (May 22, 1895): 1.

[324] *Al-Ahram* (July 9, 1896): 1.

[325] "Further Reports Respecting Cholera … 1883," 27.

The fact that the man is designated as respectable is significant in the context of elite opinions in *al-Ahram* and elsewhere that posited resistance as limited to the poor and uneducated. The British official who included this detail seems to have done so to suggest that all Egyptians are unreasonable and suspicious. But the reality of the situation was likely much more complicated. This respectable man and his household may very well have been following every commonsense sanitation measure. Following proper home sanitation would have decreased the likelihood of contracting the disease, but not erased the risk entirely. Either way, the man takes quick action to avoid enduring sanitation measures, or having his home invaded and his wife's body taken. However, he seems to have realized that by placing his wife in any definite location he was inviting the colonial sanitation authority to enter there. Thus, he finally denies remembering the location of her death altogether.

In another account, an official discusses patterns of concealment:

> The utmost ingenuity was displayed in the concealment of cases. On one occasion, the corpse of a cholera case was found in the oven covered with a heap of flour, which would have been used probably for the next day's baking. On another, a case still alive was found doubled up in a small wardrobe. Cases were removed to the cotton and dhurra fields during the day, and brought back, alive or dead, to the house at night.[326]

In these examples, ordinary objects and spaces of the home become hiding places. Furniture and appliances aid attempts to subvert sanitation officials. No potential hiding place is overlooked, family and sanitation officials alike are aware of this. Indeed, during the 1947 epidemic, deceased cholera patients were found concealed in a cabbage cart.[327] This

[326] "Report on the Epidemic of Cholera … 1895 & 1896," 98. Dhurra is a kind of wheat grain.

[327] Gallagher, *Egypt's Other Wars*, 122.

extract also tells us about the ubiquity of resistance across households of different socio-economic classes. Those who cannot hide an ill family member at home take them elsewhere to keep them safe, to the cotton fields while they work and then return with them at night.

In another incident, an employee of the British Consul is questioned because he is visibly distressed. He abruptly admits that he is upset because his child died the previous evening of cholera, and his other children are also very ill. The man relates that he had not sought out a doctor as the children's fate is in God's hands. The Consul insists that a doctor be sent for. The doctor arrives and after hearing the story suggests an autopsy of the child may be necessary to determine the cause of death. The man becomes quiet. He then goes home and hides his other children, and afterwards denies saying anything about cholera or sick children. He also persuades members of the community to say the same, and to claim that the dead child had exhibited no symptoms of cholera at all.[328]

This case highlights several things. First, that even those who worked with the British did not necessarily trust their sanitation measures. Second, the community helped disrupt the search for cholera patients. This shows that rejection of sanitation methods was widespread, and community bonds were stronger than trust or even fear of the government. Rumors and the entreaties of neighbors superseded government codes and measures on pamphlets and in newspapers. Third, the man in this case employed several different tactics to evade further disruption of his home and his family. He lied, he evaded, he elided, and he

[328] "Further Reports Respecting Cholera … 1883," 26. Khaled Fahmy has argued persuasively that autopsy was not unilaterally rejected in Egyptian society, as the European-language archive suggests. I tend to agree and think that the context of examination is essential. To the family of the victims of cholera, an autopsy would seem unnecessary, as well as hinder burial rituals and grieving. See: Fahmy, *In Quest of Justice*, 39-80.

concealed. He was also clearly more afraid of the sanitation authority entering his home than he was of possibly losing his job or any other related consequences to his actions.

Rumors and public accusations about the treatment of corpses were especially powerful and caused significant uproar. According to British sanitation strictures, corpses had to be handled by authorized washers, and official coffin bearers.[329] Members of the family were allowed to follow during funeral processions but were forbidden to touch the body.[330] In one incident, the police disrupted a funeral which they considered unauthorized. A man had died of cholera, and family had placed his body in a wood coffin instead of a metal one. Family members were carrying it through the streets, as was customary. During the middle of the ceremony, the police charged the procession and the people scattered. The coffin bearers dropped the coffin to the ground to flee.[331]

Sanitation measures rested on the assumption that Egyptian water, Egyptian homes, Egyptian people were dirty. Measures included public surveillance and disruption as well as private, invasive home sanitation. Sanitation measures were ostensibly about the control of cholera, but the archive shows us that they were also invariably about controlling people.

Conclusion

The beloved author and intellectual Taha Hussein was born into a modest but respected family in Upper Egypt. He studied at al-Azhar and then Cairo University, and was later dubbed Egypt's Dean of Letters. He wrote many studies of Arabic literature as well as fiction. In his fictionalized autobiographical work, *The Days*, he describes his family

[329] "Correspondence Respecting Cholera … 1883," 32-34; "Egypt," *British Medical Journal* 2, no. 1853 (1896): 41–42.

[330] *Instructions on Procedure in Outbreaks of Cholera,* 50-51.

[331] *Al-Ahram* (June 2, 1896): 2.

experiencing cholera in 1902.[332] Hussein writes that cholera "descended upon Egypt and attacked the population like wildfire. It destroyed towns and villages and wiped out whole families."[333] The sanitation authority appears everywhere, closing schools and setting up tents and inspecting towns to isolate the sick.

"Souls were filled with anxiety and hearts with fear. Life became a thing of no account for people. Every family talked about what had befallen the other and waited for their own share of disaster."[334] Hussein's family is no different, and eventually his brother falls ill. The family calls for the local doctor, who visits daily but can do little to help. The family is devastated, and Hussein marks this experience as pivotal in his life. "There are two people who always remember him and will always do so daily as night draws on: they are his mother and this lad (Taha Hussein)."[335] Hussein's account emphasizes what was at stake during the cholera epidemics: family, the lives of loved ones, the community. This fact is altogether muddled in other sources, even as the family, the home and the community make repeated, important appearances.

Water, community, family were entangled, and rumors fueled what experience affirmed: resolute resistance to any cholera sanitation procedure was necessary to preserve the community, its resources, and its people. British sanitation officials and some Egyptian elites could only fathom that the reason for resistance was ignorance. They did not understand that people did not believe their underlying justification of public health.

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[332] Taha Hussein, *The Days*, trans. E. H. Paxton, Hilary Wayment, and Kenneth Cragg (Cairo: The American University of Cairo Press, 1997).

[333] Ibid, 92.

[334] Ibid.

[335] Ibid, 98.

Resistance efforts claim an alternate narrative: the community and family were the ones caring for the public, and its health. The government and sanitation authority were engaged in ripping it apart.

As discussed in chapters one and two, one of the key problems with Egyptian urban water infrastructure modernization, such as the distribution of taps or the closing of the Khalig, was that it exacerbated structural inequalities to clean water access. Cholera is one of the most dramatic outcomes of this uneven system. There was no easy quick way to fix systemic inequalities that had radically reoriented water access into a capitalist enterprise, funneling large groups of people to a few taps, or making some walk miles for what officials deemed as "clean" water.

The understandable panic that accompanies an aggressive, extremely deadly epidemic disease compounded with distrust in colonial governance complicated good faith efforts to mitigate disaster. When officials in 1895, for example, wondered at the reason people avoided company taps, they were not taking into account the logic and dynamics of urban spatial practice. Why would a person take water from a tap or well built by the same government that invaded their neighbor's house and forcibly removed an ailing family member? A notable cinematic comparison is a scene about halfway through the film *Battle of Algiers*, in which after a brutal sweep of the casbah the French army attempts to regain some trust among the community. A marching band is sent through the streets, accompanied by soldiers bearing food: loaves of bread and other items. Some of the children follow along and reach out their hands, but most turn their heads and hurry away (fig. 3.14). [336]

[336] Gillo Pontecorvo, *La Bataille d'Alger* (Irvington, N.Y: Criterion Collection, 2004), especially about 1 hour 19 minutes and 30 seconds into the film.

Knowledge passed through urban, even rural communal space first and foremost through experience, through verbal communication, through informal communal networks that believed and spread rumor for good reason. Water, family, and home were spatially entangled in a way that had little to do with an individual's intellectual understanding of the pathology of cholera. Rather, in the streets, courtyards, hallways, kitchens and fields of Egypt, the experience of the pursuit of cholera dictated methods of resistance.

Chapter Four. Bodies in Water: Corporeal Slippages in Alexandria

Introduction

At the beginning of the film *Iskandariya, Ley?* (Alexandria, Why?) set during World War II, a few opportunists seek to earn 100 pounds by bringing a resistance leader, Adel Rey, a New Zealand officer to kill.[337] The only suitable offering they can find is a torturously drunk blond Englishman named Tommy from Dover, belligerent and causing a scene at the local cabaret. Adel picks him up from the cabaret in his car and brings him to a bridge. He leans him bodily over the side and steps back, considering whether to shoot him, or let him fall over the side into the water (figs. 4.1-4.2). The young man groans, and Adel approaches, pulling him off the rail. The young man's story comes pouring out – he just lost his mother, and tomorrow off to the front. Adel Rey takes pity on him and brings him back to his fine house where the soldier recovers. The two become lovers, writing to each other frequently after Tommy's departure.[338]

The potential for drowning haunts this scene. The inebriated British soldier and the vista of the Mediterranean at night reference danger as a part of the social and spatial history of water, and of Alexandria. Indeed, not minutes later in the film, the protagonist of the film,

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[337] Youssef Chahine, *Iskandariya Ley?* (New York: Fox Lorber Films, 2000). This is the first of four movies that are semiautobiographical accounts of Chahine's life. This one focuses on his youth in Alexandria during World War II. There are many subplots, Adel and Tommy's relationship is one of these.

[338] The complexity of Tommy and Adel's relationship, and the intertwinement of water as an index of eroticisms, sexuality, and romantic love in this film and others of Chahine's, deserve further critical attention. Youssef Chahine frequently uses water to indicate transgression and slippages, as well as the constant presence of the potential for such. Indeed, when Tommy awakens at Adel's mansion and the two converse while walking in Adel's garden, Tommy playfully balances along the edge of one of Adel's pools, providing a clear visual link to their meeting place, and the liminal space of the couple's budding romance.

Ibrahim, encounters the faceless body of a British soldier that washes ashore while he is fishing. At the turn of the nineteenth century, bodies near water, and bodies in water formed an essential part of people's daily relationship to the Nile, its canals, and the Mediterranean. People interacted with water to fish, to bath, to swim; to wash to drink, and to socialize. Drowning could happen during any of these activities. At the same time, discourse around bourgeois respectability in Egypt sought to address and contain public drunkenness. In this chapter, I consider the intersection of bodies, water, and bodies in water and how these relationships refract the process of water infrastructure modernity, especially as it began to frame some places, some people, and some activities as improper and dangerous.

In 1883 Alfred Purser, a British soldier stationed at Alexandria, spent the day out drinking in the public garden with friends. On the walk back to the barracks, he went off to the canal to urinate, fell in and drowned.[339] To my knowledge there was no explicit condemnation of the convergence of the three critical circumstances in Purser's case: social drinking, public indecency, and proximity to water. And yet, I see compelling threads that link drowning, the censure of certain behaviors, and the closure of water spaces. Likewise, I cannot infer that Purser's death and its inquest process were the same for all inhabitants of Egypt.[340] But the documents in Purser's inquest file provide an opening to consider the

[339] Shana Minkin has indicated that drowning was very frequent, and the officers were at a loss of what to do about it. For a review of these cases, see: Shana Minkin, *Imperial Bodies: Empire and Death in Alexandria, Egypt* (Stanford: Stanford University Press, 2019), 122-123. My thanks to Dr. Minkin for corresponding with me about these deaths, and for sharing her notes.

[340] I was not able to access inquest files at the Egyptian National Archives (Dar al-Watha'iq al-Qawmiyya) for this dissertation, which would potentially have allowed for a more meaningful comparison. Such files do exist, as Khaled Fahmy has shown in his recent work on forensic medicine. The purpose of these files is likely similar to Purser's, in the sense that the cases were opened to determine that the cause of death was indeed drowning

implications of the hundreds of incidents referred to in short notices in Egyptian government reports and newspapers. What can unentangling these threads reveal about the modernization of social water spaces? How can we understand the enticing circumstantial overlaps that coincided with an aggressive reduction in the availability of open water in Alexandria?

The facts of Purser's case reflect shared international bourgeois conversations about the moral and physical slippages of overconsumption.[341] Members of the Egyptian middle class (effendiya) embraced alcohol. But to others, such as the religious elite, it remained a questionably appropriate activity, especially in public spaces.[342] Wretched corporeality formed a part of this discourse, as the drunk and hungover drowned metaphorically (or actually) in their own fluids.[343] Publicly everyone agreed that drinking to excess was shameful, morally reprehensibly, and physically deleterious. But discourse was not synonymous with practice. As debates on alcohol and moral behavior unfolded at the urban and national level, water spaces in Alexandria and Cairo began to disappear.

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rather than something else. See: Fahmy, *In Quest of Justice,*72-73. My thanks to Dr. Fahmy for corresponding with me about these files.

[341] The fact that Alfred Purser was British cannot be removed from consideration. Certainly, he participated in Alexandrian public life, but soldiers were required to wear their uniforms in public and were always first and foremost part of the occupying forces. There is both a privilege and a danger to this, as the scene from *Iskandariya, Ley*? illustrates. Identity and the "cosmopolitan" aspect of Alexandria has been a topic of interest for quite some time. Two useful recent additions to this bibliography: Will Hanley, *Identifying with Nationality*; Minkin, *Imperial Bodies*.

[342] Omar Foda, *Egypt's Beer: Stella, Identity, and the Modern State* (Austin: University of Texas Press, 2019), 11-26.

[343] For one case in which the cause of death was ruled as drowning in his own vomit after too much drinking, see: Fahmy, *In Quest of Justice*, 221.

After laying out a framework for my discussion, I will move to the case of Alfred Purser and the spatial implications of drinking and drowning in Alexandria. From there I step back to consider death by drowning in Egypt, a tragic, quotidian occurrence. Then I will discuss the entangled issues of drinking, drowning, and moral behavior in Egypt. Finally, I consider how water was considered dangerous, misused and unproductive, and analyze the dramatic transformation of the landscape of Alexandria from a place of many opportunities for water sociability, to one with far fewer.

Frame

In Shana Minkin's work, death is a site in which identity in Alexandria is worked out, as national interests lay claim to the body and its adjudication. This was not necessarily a simple matter, nor was it discreet. Multiple agencies including the local Egyptian police would be involved in sorting out the logistics and legal matters of death of a person of any nationality.[344] Khaled Fahmy's numerous studies on police procedure, forensic medicine and autopsy have shown that ordinary Egyptians used these modern resources to their benefit; to investigate murders, uncover wrongdoing and seek justice.[345]

At the end of the nineteenth century, international as well as local Egyptian discourse was defining the way that bodies, including dead ones, should move, behave, and be treated in space. Public decency norms and public health aspirations informed modern urban

[344] Shane Minkin, "History from Six-Feet Below: Death Studies and the Field of Modern Middle East History," *History Compass* 11, no. 8 (2013): 632–46; idem, *Imperial Bodies*.

[345] Fahmy, *In Quest of Justice;* idem, "The Police and the People in Nineteenth-Century Egypt," *Die Welt Des Islams* 39, no. 3 (1999): 340–77; idem, "The Anatomy of Justice: Forensic Medicine and Criminal Law in Nineteenth-Century Egypt," *Islamic Law and Society* 6, no. 2 (1999): 224–71. Drowning inquests are a part of this archive, although a relatively small one according to Fahmy.

morphology.[346] The Egyptian viceroys were keen to produce modern gardens, squares, and boulevards in which to build statues, hold state processions, and for the public to see and be seen. The proliferation of these spaces encouraged the cultivation of the Egyptian bourgeoisie or middle class.[347]

Such spaces were not inherently stable, despite the many rules and regulations governing how they should be used. Anxieties around propriety and exclusivity were nurtured and renewed in the presence of ordinary people and ordinary processes, such as street hawking.[348] Behavior such as drinking, shouting, singing, and public urination challenged goals to influence behavior with quintessential modern urban forms such as wide

[346] There is a large bibliography on modern city planning and its relationship to moral and physical health. A few examples include: Daniel M Bluestone, *Constructing Chicago* (New Haven: Yale University Press, 1991); Zeynep Çelik, *The Remaking of Istanbul: Portrait of an Ottoman City in the Nineteenth Century* (Seattle: University of Washington Press, 1986); Preeti Chopra, "Free to Move, Forced to Flee: The Formation and Dissolution of Suburbs in Colonial Bombay, 1750–1918," *Urban History* 39, no. 1 (2012): 83–107; Colin Fisher, "Nature in the City: Urban Environmental History and Central Park," *Magazine of History* 25, no. 4 (2011): 27–31.

[347] Nineteenth-century public spaces, such as the square, park, and garden provided an opportunity for the state and the people to perform with and against each other. Scholars such as Zeynep Çelik and Sibel Sandi-Sayek have shown how formal celebrations, such as the visits of the Ottoman sultan, were performed in these spaces to reinforce provincial capitals links to the metropole, as well as to show the power of the sovereign state. Statues, clock towers, fountains, state-sponsored mosques or schools might adorn public parks and squares, reinforcing the spatial dialectic of power. However, these spaces also provided places to protest; both in the form of unauthorized political gatherings, as well as simply to meet and circulate controversial ideas and materials. See: Çelik, *The Remaking of Istanbul: Portrait of an Ottoman City;* idem, *Empire, Architecture, and the City: French-Ottoman Encounters, 1830-1914* (Seattle: University of Washington Press, 2008); Sibel Zandi-Sayek, *Ottoman Izmir: The Rise of a Cosmopolitan Port, 1840/1880* (Minneapolis: University of Minnesota Press, 2012).

[348] Ziad Fahmy's analysis of a 1928 short film called *Cairo Street Scenes* is poignant in this regard. His focus on sound enriches our understanding of the complexity of class, especially as it was extremely difficult to regulate and "silence" the noise of the lower classes. See Fahmy, *Street Sounds*, especially introduction and chapter one.

boulevards and manicured gardens. Attempts to regulate and purge improper behavior from public space varied, and included surveillance, criminalizing vagrancy, and closing spaces entirely. Public decency regulations criminalized poverty, as those who could not provide proof of employment or residence could be removed and put to work elsewhere.[349] Gates, fees and watchmen attempted (sometimes successfully) to enforce such rules and turn public spaces into spaces for certain publics.

The history of fresh water at Alexandria is an imperative frame. Water defined the borders and experience of nineteenth-century Alexandria. The city and its suburbs are situated on an isthmus, bordered by the Mediterranean to the north and the salty waters of Lake Maryut to the south (fig. 4.3).[350] The old city sits on a peninsula that stretches out into the Mediterranean, creating two natural harbors. Alexandria's bustling port conditioned many people's experiences of its streets and along its shores. People arrived in ships, worked on the docks, sunned on its beaches, and made money off its churning trade economy. Like Cairo, Alexandria's freshwater source is the Nile. The Nile waters arrive at Alexandria via the Mahmudiya Canal, which skirts the southern edge of the city, just to the

[349] For more on the tadhkira system, see: Mitchell, *Colonising Egypt*; Ener, *Politics of Benevolence*. Similar laws were in place in other countries. The connection of this practice to papers please laws in the US is clear. Vision informed who police would approach and ask for evidence of work, and those who looked wealthy (whether they were or not) were not normally approached. See: Leslie Harris, *In the Shadow of Slavery: African Americans in New York City, 1626-1863*, (Chicago: University of Chicago Press, 2003); Rebecca Ginsburg and Clifton Ellis, *Slavery in the City: Architecture and Landscapes of Urban Slavery in North America* (Charlottesville: University of Virginia Press, 2017).

[350] Lake Maryut is not a freshwater lake, but basically a largely enclosed section of the Mediterranean. There is evidence that it used to be a freshwater lake supplied by the Canopic Canal. There is an abundance of excellent archaeological research on the history of the water landscape of Alexandria. See: Isabelle Hairy (ed), *Du Nil a Alexandrie: histoires d'eaux: exposition au Musée de Tessé du 26 novembre 2011 au 27 mai 2012* (Alexandrie: Centre d'Études Alexandrines, 2011).

north of Lake Maryut. As Alain Mikhail has shown, freshwater lakes, canals, and ponds were a relatively new addition to Alexandria's landscape. In the eighteenth century, Alexandria and its suburbs were dry and sandy, and the Mahmudiya Canal's predecessor, the Ashrafiya Canal, required expensive sustained maintenance to support the city's meager population of anywhere from 12-20,000 (fig. 4.4).[351] Indeed, the abundant freshwater landscape of mid-late nineteenth century Alexandria was the result of Muhammad Ali's imperialist and capitalist designs, and a staggering amount of forced labor.[352] Thus, changes to Alexandria's water landscape cannot be considered as unprecedented interventions. They are part of a pattern of defining the city through water.

This historiography places us at an inflection point. Death and bodies inhabit the history of urban planning, but outside of Minkin and Fahmy's social histories, drowning exists historiographically almost entirely as topos. This is displayed near perfectly in the scene of Tommy and Adel at the bridge in *Iskandariya Ley?* In the case of my archive, there are narrative and anecdotal connections, provocative ones that can be assembled as overlapping spatial and historical relationships. But these are often temporary, even frail, and can be teased apart as soon as they are brought together. However, drowning as a story of water infrastructure modernization is important, and it raises familiar and urgent

[351] Alexandria's northeastern suburbs were called el-Raml. The word "raml" means sand. The currently accepted English spelling includes the "eh" at the end, which is why I have used it here. Mikhail discusses the population of eighteenth and early nineteenth century Alexandria. Figures ranged widely. The official number according to the Ottoman government in Istanbul in 1817 was 20-30,000 residents. Alan Mikhail, *Nature and Empire in Ottoman Egypt*, 246.

[352] Ibid, especially part II. Mikhail meaningfully analyzes the stakes of this labor, and provides an excellent overview of the changes in labor patterns that such large public works projects required, specifically the forced bodily removal of people from their homes across long distances.

questions, nonetheless. Who benefitted from the disappearance of water spaces, "dangerous" or otherwise? Is it possible that drowning was never part of the justification at all? The answer to the latter question is not obvious and represents a troubling archival absence.

A Body in the Water

On December 26, 1883, two local Alexandrines found the body of a British soldier in a canal. Their statements are preserved in two documents in Arabic in the British consular court archive. The first statement reads in part:[353]

> At 4 o'clock in the afternoon on Wednesday 26 December, [1883] the two of us were walking along the shore of the canal next to the house of Mr. Abd al-Rahman Pasha Rashidi. We saw at the mouth of the canal a hand sticking out of the surface of the water among the high grass. In order to determine if it was what we imagined, we went down into the canal and, well, soon appeared a drowned human corpse. We could not tell the gender, as [the body] was in a horrible condition, so we went to the house of his excellency [Abd al-Rahman Pasha Rashidi]. We told him everything…he sent for the police and the drowned body was brought out, and it was evident that it was an English soldier, and we were asked what we saw.[354]

The second account includes a description of several stages of discovery and recovery of the body, as well as comments on the manner of death:

> After sunset yesterday we heard about the discovery of a drowned man in the water near Nuzha station … so we went by ourselves immediately to that side. It was clear that he was a British soldier by his clothing when [the body] came out, and a high-ranking representative of the British Army stationed at Ramleh was told to receive [the body]. Then the doctor arrived and had with him the person necessary to send the deceased there (to the barracks). Soldiers often walked along this path to Ramleh, and it had been seen that he (the soldier) was walking that way in a

[353] TNA FO 847/60/54 Re: Death of Alfred Purser. It is likely that these two were local Alexandrians, or at least Egyptians. They are referred to as "native" by the English documents in the file, and their affidavits are in Arabic. Their names are not included and it is possible their accounts were transcribed. I am indebted to Shaimaa Mohammed for helping me to transcribe these so I could more easily read and translate them.

[354] Ibid.

> strange way, this caused his fall into the water and his death was clearly by no human hand.[355]

Three interrelated matters appear in these statements that shape the path of this chapter. First, there is the process of discovering a drowned body and how that process is represented. Second, there is the determination of accidental death due to a poor choice while inebriated. Third, there is the water landscape of Alexandria and the tendency for people to travel and socialize along the water, and the problems this could cause. The latter two issues were by no means new to the inhabitants of Egypt. However, modern debates concerning bourgeois respectability reframed the relationship between bodies, water, alcohol, and public behavior.

Discovery and its Representation

Finding a body is represented in these statements as understandably alarming. The process is also gradual, oblique, and at times opaque. Each statement includes different information, reflecting differing if complimentary priorities. The first seems to suggest that the discovery of the body was accidental. The second contradicts this, claiming that the two walked down to the canal specifically to confirm rumors of a body. The first statement provides more narrative and affective detail. It recalls the discovery of not the body, but a part of it – a hand among the grass. The first witness also expresses shock and horror at the state of the body's "horrible condition." The second witness discloses less concrete information. Instead, the second witness focuses on what was heard, such as the location of the body, and someone seeing a soldier walking past "in a strange way." The second account

[355] Ibid.

provides one interesting detail that seems to anticipate potential blame: "…his death was clearly by no human hand."

These two statements are the primary narrative source of information on the discovery of Purser's body. Another document, a curious sketch presumably of the location of the body, ostensibly provides spatial context in diagrammatic fashion (fig. 4.5). The map consists of a series of intersecting parallel lines drawn in pencil that suggest a series of crossing paths. "Lake" is written twice to the left and right of a long path running the length of the page. Its lines bend and become dashed near the bottom and are labeled: "to Mustapha Pasha." At the top of the page are notations at two adjacent intersections: "railway" and "to Alexandria" with an arrow. A box sits in between these two paths with a largely illegible notation that seems to read "Maison d'Ur."

Another document in the court file written by Charles Cookson, the consular physician at Alexandria, mentions a canal:

> …on the small canal called Fakher opposite the house of Abd al-Rahman Pasha [Alfred Purser] was found dead and that while walking along the canal…it so happened that accidentally and by misfortune he…suffocated and drowned…[356]

The 1865 map of Alexandria drawn by Mahmud al-Falaki provides us with enough information to identify the likely location this sketch was meant to depict (fig. 4.6).[357] In Ramleh, a path runs along a narrow unnamed canal from the Mahmudiya Canal to Lake Hadra. This canal skirts Nuzha Gardens and Nuzha Station. When the narrow canal and its

[356] Ibid. The document is signed: Charles Cookson, Andrew Phillip, Maximillian Strong, Frank Allchin, Inquest Ruling, Consular Court Alexandria, 27 December 1883. There is a canal called Farkha just south of Alexandria, but it is at least a mile from Nuzha station, and there is no path transecting two lakes at this location.

[357] I will return to Mahmud al-Falaki and his map in more detail later in this chapter.

path meet Lake Hadra, the latter becomes a causeway. When the causeway and canal are transposed onto a map from 1914, the other details of the sketch become clearer (fig. 4.7). The causeway leads almost directly from the lake to Mustapha Pasha Barracks, a perfect shortcut to and from the gardens for the soldiers.

There are a few perplexing marks on the map that cannot be confirmed. The first is the square seemingly labeled "Maison d'Ur." This may perhaps indicate the house of Abd al-Rahman Pasha, but the nomenclature is curious. The second is two clusters of irregular dash marks on the page to the left of the path. These marks may indicate where Purser fell in, and where his body was discovered. The lines echo one of the witnesses' comments about finding the body among grasses. Whatever the exact meaning of these marks, the comparison of the sketch with these two maps suggests that Purser's body was found along this small canal, close to Nuzha station as the witness statements indicate.

None of the other inquest documents mention the map. And its purpose is enigmatic in the context of the inquest. What evidence does this sparse composition aim to elucidate for the jury? If it is the exact location of the body, the document itself is insufficient, even perplexing. There is no label to indicate the body, after all. Rather what is represented most clearly by this document is the unusual path across water that soldiers were in the habit of taking. Such a path could easily become dangerous for someone like Purser. Indeed, the causeway does not appear on any subsequent maps of Lake Hadra that I have found. Such water spaces slowly and steadily disappeared from Alexandria over the course of British occupation, replaced by the armature and edifices of an expanding metropolis.

Walking inundated (occupied) Alexandria: the significance of the map

The curious little drawing in Purser's inquest is a rare addition to such files. Rhetorically it shows the desire to visualize the circumstances of death and discovery. Although the map is schematic, it indicates to us an important aspect of the investigation: the path he aimed to take back to the barracks, and ostensibly the reason he did not make it there. Curiously the canal in which he lost his life is not indicated. Instead, the two labels "lake" highlight Purser's path as surrounded by water. Thus, the map clarifies that Purser had a fatal interaction with the landscape of Alexandria, a city defined by dozens of winding canals, lakes, and the Mediterranean Sea.

There are two different accounts of Purser's death. One is recorded second hand in the second Alexandrine's statement quoted above. The second account is recorded in the witness statements of Purser's two companions: Private Henry and Private Leeuwen. Both narrate that on the way back from the garden, Purser walked off into the canal to urinate and never came back. Leeuwen describes: "He fell out to make water…I don't know what became of him afterwards. We never found him." The two went looking and called out for him but received no answer. "We had to be back for duty," states Leeuwen, so they returned to the barracks. Both of them admit that Purser had been drinking about four glasses of brandy. But Henry states that "He was quite sober when we left him and able to look after himself." Leeuwen concurs that "he was perfectly sober." Another statement made by Purser's sergeant is more of the same: "he was a very good character always a steady man. I never knew him to drink at all." The statements seem to anticipate that officials will label Purser a drunk who made a fatal error.

Falaki's map makes clear that navigating Alexandria and its suburbs in the mid nineteenth-century required comfort with water. A person must frequently walk along and across various waterways. Canals especially weave in and out of the landscape, crossing orchards, running alongside paths, disappearing underground only to reappear again, much like the so-called Fakher Canal's path that wound above and below ground all the way from the Mahmudiya Canal to the Mediterranean Sea. Whether Purser had been inebriated or not, the number of opportunities to fall into a canal, into a pond or into the sea by accident were substantial.[358]

Drowning in Egypt

Drowning was unfortunately common in late nineteenth and early twentieth century Egypt. *In Majmu'at al-qararat wa-l-manshurat*, a monthly Egyptian government circular devoted to the decisions of the Council of Ministers and other news, drowning is discussed with almost casual regularity:[359] "Nothing important happened outside of everyday incidents, among these in the city of Ismailia a girl drowned in the freshwater canal."[360]

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[358] Purser and his companions, however, did not walk across this landscape in the same manner as any other inhabitant. They were members of the infantry of the occupying army. In the multitude of brief daily drowning notices in the newspaper archive that I will discuss, nationality is both incidental and quite important. Anyone could drown, but not everyone would raise the concern of the British army.

[359] *Majmu'at al-Qararat wa-l-Manshurat* (Egypt: 1889-1920). I have not been able to find much information on this serial, but it is referenced occasionally in social history studies. It is actually a fairly remarkable resource, and resembles in some ways the British government ad hoc reports. There are letters, news updates, decrees, rules and codes of various national departments, municipal codes and updates, military court rulings, and articles on issues of urgent interest, such as cholera, and the Nile flood. There were similar publications available to the public in Iran at this time, which indicates it may have been publicly available rather than an internal circular. My thanks to Farshad Sonboldel for this information.

[360] "Nizarat al-Dakhaliya: Taqrir min Muhafizat Umum al-Qinal fi 22 Junio 89," *Majmu'at al-Qararat wa-l-Manshurat*, July 1-31 1889 (Egypt: 1889).

In this periodical, drowning deaths are often part of municipal news reports, and occurred frequently in the Suez cities. The notices are brief and short on details. Notices in daily newspapers are similar in this regard.[361] Drowning events are organized with accidents or other violent events, such as falls, fires, traffic incidents, and sometimes murders.[362]

I include a list of examples from 1881 to 1909 to illustrate some key patterns.

> Drowning – the corpse of a boy known the son of Mr. (illeg.) al-Qatin was found in the Nile at Bulaq. The body was pulled out and it was confirmed that he died by asphyxiation from drowning and not another cause. He was buried.[363]
>
> Yesterday morning the drowned body of a native (*watani*) arose in the Mahmudiya Canal. The body was found dead near the Saray al-Haraqaniya…[364]
>
> Drowning—a man called Ali Khadim, a resident of Bulaq, went out to water the horses of his master and fell into the Nile and drowned.[365]
>
> A boy (*ghulam*) named Ali Abduh from Bulaq drowned yesterday while bathing in the Nile. The body (*jitha*) was found dead (*fa'idat al-hayat*).[366]
>
> The body of a native man about 25 years old was found floating in the waters of the Nile (*al-bahr*). It was pulled out near Bulaq. When no one claimed [the body] it was sent to the hospital.[367]

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[361] *Al-Qahira al-Hurra* included a column on drowning events (*hawadith gharaq*). Drowning events were included in the local news and police columns of many newspapers. I include some examples from a number of publications below.

[362] Popular publications parse violence due to crime versus accidents more clearly in the early twentieth century. See: Shaun Lopez, "Madams, Murders, and the Media: Akhbar al-Hawadith and the Emergence of a Mass Culture in 1920s Egypt," in *Re-Envisioning Egypt 1919-1952*, ed. Arthur Goldschmidt, et al (Cairo: American University in Cairo Press, 2005), 371–97.For Industrial accidents became a significant motivation for many labor movements of this time. See: Chalcraft, *Striking Cabbies*. For accidents and infrastructure in Alexandria, see: Barak, "Scraping the Surface."

[363] *Al-Ahram*, (Aug 12, 1881): 3.

[364] *Al-Ahram* (June 23, 1883): 3.

[365] *Al-Ahram* (June 23, 1881): 3.

[366] *Misr al-Fatat* (May 16, 1909): 2. I have found very little information on this periodical, but it seems to have been a daily newspaper published in Alexandria founded in 1879.

[367] *Misr al-Fatat* (May 23, 1909): 2.

> …Nothing happened except…a boat sunk…and none were saved, one body arose the next day and it was seen that he died of asphyxia from drowning…and similarly a little girl drowned…[368]
>
> A person drowned in the sea near Ramleh. The body was pulled out, inspected [by a doctor] and sent to the hospital.[369]
>
> The drowned body of a person named Sha'arawi was found in the Ismailia canal. It appeared from the medical inspection that he had drowned by accident.[370]
>
> A young boy about 15 years old drowned in Fum al-Khalig. The body was brought out, a doctor was sent for, and he was pronounced dead.[371]
>
> Nothing happened in Ismailia except the drowning of a Frenchman who worked for the Suez Canal Company. His body has not yet been found.[372]
>
> We heard news that in Alexandria a fishing boat of one of the Maltese, in it its owner and his son and two others...together on the boat they spent several days and did not return … indicating that the boat had sunk and the men with it. So the department of (illeg.) at Alexandria searched for the four of them but they found not a trace of them. A native mentioned that he had seen pieces of wood that may be evidence of the sunken boat.[373]
>
> Two young boys drowned at the spring/well (*yanbu')* at Helwan. The police know the family of one of them, but the other's name and family remain unknown…[374]
>
> a young Greek boy died in the Khalig while he was swimming within arm's reach of his companion. The body was pulled out and a doctor was sent for. According to the doctor the reason for death was asphyxiation from drowning.[375]

This collection of brief statements must be considered as representative, rather than comprehensive. They are a selection of the many printed in any given year, and further still likely only a portion of those that actually occurred. The rhetoric and format of the newspaper clip compresses and normalizes most cases of drowning to conform to set of

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[368] "Taqrir min Muhafizat Dumyat fi 22 (Aghustus)," *Majmu'at al-Qararat wa-al-Manshurat*, (August 22, 1889), 634.

[369] *Al-Mu'ayyad* (July 19, 1893): 3.

[370] *Al-Mu'ayyad* (May 6,1891): 3.

[371] *Al-Mu'ayyad* (August 1, 1893): 3.

[372] "Taqrir min muhafizat al-qinal fi 16 Maris," *Majmu'at al-Qararat wa-l-Manshurat*, (16 March 1889), 282.

[373] "Haditha Bahiriya," *al-Qahira al-Hurra* (March 6, 1888): 2.

[374] *Al-Mu'ayyad* (June 14,1899): 3.

[375] *Al-Mu'ayyad* (August 18, 1894): 3.

standard attributes, such as basic demographic information. Specific locations make repeat appearances. Drownings near Bulaq were very common. The act of calling for a doctor and the official pronouncement of death also appear frequently. As individual notices they are unfortunate, as a group the assemblage is overwhelming. They read like tragic variations on a theme, little changes while much seems to remain the same.

Together these notices depict a topos. Anyone could drown. A native Egyptian, a Frenchman, a Maltese; most drowned doing ordinary activities, such as bathing, swimming, doing chores or fishing. Such as the particularly tragic death of the young boy who died ostensibly right next to his friend or caregiver. At least two of these are the result of accidents during swimming or bathing. One's body could be found, or it might remain lost. But none of these notices include much information on the person who died.

To compare these notices to British inquest files like Purser's is both illustrative, and misleading. For one these notices are not court documents. They appear in a different venue for a different audience. However, Purser's file does not include different information, just more detail on the same attributes. For instance, even though Purser's file is in comparison to these notices extensive, we learn very little about him in the end. This is the case in other British drowning inquest files and is likely the case for Egyptian ones as well.[376] In Purser's case the procedural aspects of the case loom large, as does the map that indicates Alexandria as a series of water crossings, each a potential for drowning. From this perspective both the inquest file and the newspaper notices function as warnings, as representations of water landscapes as dangerous, even capricious.

[376] Khaled Fahmy's discussion of drowning investigations prior to British occupation indicate similar foci. See: Fahmy, *In Quest of Justice*, 72-73.

The popular monthly science and medical journal *Tabib al-A'ila* commented on drowning in a January 1901 issue. The editor of the publication, Alfred Eid, was a medical doctor and government official who leveraged his training and political savvy into a variety of enterprises, including publishing.[377] This publication periodically employed images to illustrate and emphasize aspects of its moral and practical advice. Images run the gamut from schematic illustrations of medical techniques, to moralized lessons that chastise the reader to listen to the experts. In this case, the cover image shows the reader what to do to save someone who is drowning (fig. 4.8). The setting depicts a familiar water landscape: a dock along a branch of the Nile or one of its canals. Similar docks were used to launch boats, or to reach beyond the shallows to pull potable water (fig. 4.9). The accompanying article titled "*Gharaq*" (Drowning) prescribes the proper way to float, as well as narrates the life-saving actions depicted on the cover.

In the image, a man has fallen out of his boat and is waving for help. Several people are gathered near the dock, at least two of them making an active effort to save him. One of them keels on the dock to throw his jacket upstream so that it will float down to the person in the water, as the accompanying article advises. His manner of dress is significant. The would-be rescuer wears a tarbush and a suit, marking him as an effendi. As Lucie Ryzova has shown, these tarbush-wearers (*mutarbashun)* were identified with the trappings of modern society, including adopting western dress and so-called western habits, such as

[377] Arnold Wright, *Twentieth Century Impressions of Egypt Its History, People, Commerce, Industries, and Resources* (London: Lloyd's Greater British Publishing Company, Ltd, 1909), 116; Alfred Eid, *Histoire de la médecine en Égypte* (Caire: Imprimerie Nationale, 1904).

drinking alcohol, studying in Europe, and advocating for secular culture and governance.[378] Another man to the left of the dock is in the process of unfurling his turban, which he can also throw into the stream, or secure to the bank and use as a life line.[379] These *mu'ammamun* (turban wearers) were frequently represented as rejecting the goals and methods of the tarbush wearers. In this circumstance, both find common ground in being educated about the proper way to save a drowning victim and being willing and able to act.

Unlike the two men at the dock, the women watercarriers with pots on their heads stand silently and watch the scene unfold. The author admonishes those who do not know how to save a drowning person to stand clear, as they can do little more than agitate everyone with yelling and fretting, including the drowning individual.[380] The article also encourages people to train their children to swim at an early age. If family members cannot swim, they can be taught to float properly to avoid getting weary until help arrives. Accompanying figures indicate the proper method (fig. 4.10). The author stresses that this technique is sound, and that even women and children who did not know how to swim have survived by floating in this manner until help arrived.[381] The article and images instruct the reader that all Egyptians, or at least all Egyptian men, must come together to address drowning.

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[378] Lucie Ryzova, "Egyptianizing Modernity through the 'New Effendiya': Social and Cultural Constructions of the Middle Class," in *Egypt under the Monarchy, Re-Envisioning Egypt 1919-1952* (Cairo: American University in Cairo Press, 2005), 129-130. Also see Jacob, *Working Out Egypt,* 186-224, for an excellent discussion of the meaning of the tarbush.

[379] *Tabib al-A'ila*, 6, 3 (January 1901): 50-55.

[380] Ibid, 54.

[381] Ibid.

The article and its illustrations are in conversation with the drowning notices in a specific manner. Both evoke key familiar details, such as a dock, a boat, a canal. Thus, didactic and informative literature reinforced common themes about drowning through visual and spatial markers: that it could happen to anyone, in any water space in Egypt.

Urban Corporealities: Alcohol and Behavioral Slippages

As elsewhere, nineteenth-century Egyptian modernity fostered a fraught, uneven image of public propriety informed by class and gender among other identities.[382] Nineteenth-century women's magazines and literature sought to nurture visible political and cultural roles for women in Egyptian society.[383] At the same time, women's products and advertisements emphasized cleanliness, cosmetics, and whiteness as essential to the new Egyptian woman's public appearance and identity.[384] For bourgeois men of the emergent effendiya class, there were similar complications on the political and social aspects of proper masculinity.[385]

Omar Foda has argued that social beer consumption formed an essential part of effendiya identity from 1882 into the 1970s. The alcohol industry grew and thrived over this

[382] In contemporary literature, women were considering their own inclusion/exclusion from society. An essential part of this was some upper class women's seclusion in the home. See: Marilyn Booth, "Scattered Pearls and Mistresses of Seclusion: Zaynab Fawwaz, Arabic Biographical Writing, and a Canon of Female Visibility" (University of California Press, 2001); Huda Sha'rawi, *Harem Years: The Memoirs of an Egyptian Feminist (1879-1924)*, trans. Margot Badran (London: Virago, 1986). The fraught view of the body from the European perspective would have an effect in the colonial government's public health policies and policing. See: Pamela Gilbert, *Mapping the Victorian Social Body* (Albany: State University of New York Press, 2004).

[383] Hoda El Sadda, et al, *Zaman al-Nisa' wa-l-Dhakirat al-Badila: Majma'at Abhath* (al-Muhandisin Jizah: Multaqa al-Mar'a wa-l-Dhakira, 1998).

[384] Russell, "Marketing the Modern Egyptian Girl."

[385] Jacob, *Working out Egypt*.

time, importing brands and developing local products. Many cabarets and bars were owned by Italians and other foreign nationals, but a solid portion were also owned by local Egyptians, including women.[386] The alcohol industry required a solid local customer base in order to succeed. Alcohol consumption showed one's alignment with bourgeois modernity.[387]

Whether or not one approved of alcohol or imbibed personally, popular discourse including the editors of *Tabib al-A'ila* condemned drunkenness as a danger to moral propriety, public health, and public safety. In the latter category drunks appear in court documents and newspapers as flying into rages and killing people for minor slights.[388] However, most didactic, analytical or informative literature focused on minor behavioral slippages that could lead to humiliation and shame. Alcohol changed behavior, it loosened morals and tongues, tripped rational thinking, and made bodies leak.[389] However, overconsumption was not uncommon during public festivals, including mawlids.

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[386] Omar Foda, "The Pyramid and the Crown: The Egyptian Beer Industry from 1897 to 1963," *International Journal of Middle East Studies* 46, no. 1 (2014): 143-145; Foda, *Egypt's Beer*.

[387] Ryzova, "Egyptianizing Modernity through the 'New Effendiya;'" Will Hanley, "Grieving Cosmopolitanism in Middle East Studies," *History Compass* 6, no. 5 (2008): 1346–67.

[388] For two examples in newspapers, see: *al-Qahira al-Hurra* (February 23, 1887): 2; *al-Qahira al-Hurra* (February 27, 1887): 2. TNA FO 846/7/56 includes two cases of a drunk flying into a rage and stabbing someone in Alexandria. One man was killed because he rebuked a man for urinating in the street, another for pushing him too hard while trying to pass him, also in the street.

[389] There is no shortage of references to the issue of alcohol in contemporary literature. For a short discussion, see Foda, *Egypt's Beer*, 1-19. A fascinating contemporary text that uses alcohol as a specific marker of Egyptians' moral abjection is: Muḥammad Umar, *Kitab Hadir al-Misriyin aw-Sirr Ta'akhkhurihim* (Cairo: Matba'at al-Muqtataf, 1902). Certainly, this was also a global phenomenon. U.S. Prohibition lasted from 1920 to 1933 and was in large part driven by the temperance movement. For the US, see: Thomas Pegram, *Battling Demon Rum: The Struggle for a Dry America, 1800-1933* (Chicago: Ivan R. Dee, 1998). For

The celebration of Sham al-Naseem marks the beginning of spring and takes place the Monday after Easter. In Alexandria, celebrants greeted Sham al-Naseem with a morning walk on the beach to sit and "smell the sweet breeze" (fig. 4.11).[390] In other cities and towns, a trip to the public garden, or to the Nile or one of its canals was also common. The writers of *Tabib al-A'ila* recognized Sham al-Naseem yearly and often took the opportunity to provide advice on overindulgence.

In one cover image and accompanying cartoon from the April 1896 issue, peaceful but overindulgent celebration ends in a miserable stomachache (figs. 4.12-4.13). The cartoon functions as a clever but slightly cloying self-endorsement for the medical advice in the accompanying article. In the first frame, the man is sick from too much food and drink at Sham al-Naseem. He groans and reaches for his trusty magazine, *Tabib al-A'ila*. The title is clearly visible on the front of the volume. In the next frame the man's servant provides him with a glass of liquid that looks like wine or some sort of tonic. He drinks it and in the next frame is all better, exclaiming "Thank God!" The treatment puts him in such a good mood that when he meets a *Tabib al-A'ila* seller in the street, he pats him on the back and gives him a tip. "I am grateful for your magazine," he says, with a smile on his face, "and by God you deserve more of it (tips)!"[391]

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studies on alcohol consumption and how it was practiced and received in the Ottoman empire, see: Francois Georgeon, "Ottomans and Drinkers: The Consumption of Alcohol in Istanbul in the Nineteenth Century," in *Outside In: On the Margins of the Modern Middle East*, ed. Eugene Rogan (London: I.B. Tauris, 2002), 14–36.

[390] Edwar el-Kharrat offers a fictionalized description of Sham al-Nassim at Alexandria in: "Ruza wa Adil (Rosa and Adele)," Idwar Kharrat, *Madarib al-Ahwa': Qisas Qasira* (al-Qahira: Dar al-Bustani lil-Nashr wa-l-Tawzi', 2003).

[391] Doctors often recommended small amounts of alcohol as a digestive supplement, particularly wine. Advertisements in *Tabib al-A'ila, al-Ahram* and elsewhere often boost of medicinal qualities. Drunkenness was virtually always condemned.

Another *Tabib al-A'ila* cartoon from April 1905 condemns drunk behavior at Sham al-Naseem in a stark moralized tale.[392] The cover image serves as an innocent prelude to a sordid and regrettable affair, and it provides us with our moral guidepost (fig. 4.14).[393] Three men stand in an open area, likely a beach or garden. They are well put together and alert, smiling out at us. The men's manner of dress is again significant. One of them wears a European-style suit and tarbush, marking him as an effendi. Such a man would be the primary audience for publications like *Tabib al-A'ila*.

Another one of the men wears a robe and turban, perhaps depicting him as a member of the poorer classes (fellah), a country landowner, or a member of the religious elite. The third man wears trappings of both ends of the modern ideological spectrum: a long robe adorned with a suit jacket, and a tarbush on his head. While their clothing may represent different ways of viewing the future of Egypt and its people, all differences are set aside to celebrate Sham al-Naseem together. The three men stride along side by side, carrying the trappings of Sham al-Naseem: palm fronds, picnic baskets likely full of colored eggs, *fisikh* (a type of dried and salted fish) and green onions. The caption at the bottom of the cover image reads: "Greetings to Sham al-Naseem, this lucky occasion is not to be wasted." The episodes that follow show that the men have every intention of doing the exact opposite – of using the celebration as an excuse to *get* wasted (fig. 4.15). The captions to the images read as follows:

Title: The Comedy of Sham al-Naseem

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[392] *Tabib al-A'ila* 3, 6 (April 15, 1898): 121.

[393] Interestingly, this image was used in 1897 as the cover image for April without the additional cartoon and strident article condemning drunkenness. It was not uncommon for *Tabib al-A'ila* to reuse images from time to time.

> Upper left (1): [During sham al-naseem] it is acceptable to drink, sing, and play. He [the family doctor] drives us crazy going around with religious rules and the advice of the family doctor.
> Lower left (2): Nothing is wrong, oh world, I am not drunk but dizzy!
> Upper right (3): (On the tram) Shame on all of you. You have committed a crime. May God curse you and those with you. This is not Sham al-Naseem. This is drinking poison. Where are your manners and your propriety?
> Lower right (4): Just like that (blah blah blah), you poor things. You would sell your reason and your honor and your health for a little wine. You will leave behind a thousand heartbreaks, [now] take your medicine and thank the family doctor.[394]

A personification of *Tabib al-A'ila* is dressed in the guise of a shaykh. He appears in each frame of the cartoon and will serve as our narrator and moral advisor through the unfortunate set of events to follow. In the first image, he gazes at the three inebriated men with arms raised. The sun is just coming up and the three revelers are on the beach, already drunk. Two of them are standing, holding bottles and hands to the sky. One of the standing revelers looks out at the reader mid-pirouette, his bottle perhaps already empty. The third sits on the ground, his legs splayed, focused intently on tipping the dregs of the wine into his mouth.

Each caption is written in Egyptian colloquial Arabic. In the first caption, the revelers respond to the unspoken admonishment of the Family Doctor: "[During sham al-naseem] it is acceptable to drink, sing, and play." In this case the men conflate the personification of the family doctor and the journal in which their story is printed and mock both. In the next frame, the family doctor watches in the background as the men continue their revelry as the day continues, staggering around together, waving palm fronds over their heads. The clothing of the man at left has started to rumple from the day's festivities: his

[394] My thanks to Nuha Khoury for helping me refine these translations.

vest is no longer straight, and his jacket is askew. The caption addresses the reader as one (or all) of the men, as they proclaim to be well, that they are not drunk but dizzy.

The first two images show things going fairly well for the revelers, despite the implied admonishment of *Tabib al-A'ila*. In the next two images, however, things turn ugly. First, the celebrants decide to take a ride on a loaded tram and end up getting sick, all over each other and their fellow passengers. The scene is a veritable bourgeois nightmare: people are crushed against each other, all forced to share the corporeal misery of the three men in close quarters. Their bodies have rejected being drowned in alcohol, spewing fluids in a dramatic fashion. One unfortunate man is stuck in between two of them and is thanked for the privilege by being vomited on by both. He raises his cane, echoing the raised arms of the woman behind him. The experience is one of abject horror, the men's ill behavior is shameful, crass, gross, and very public. The caption emphasizes such behavior as contrary to what is expected of them, as the doctor exclaims, "where are your manners (*adab*) and your sense of propriety?"

In the final frame, two of the men have sought out the help of *Tabib al-A'ila.* It is unclear what has become of the third, the effendi. The doctor scolds them like children as they gesture in pain, holding their stomachs. The doctor is unphased, they will sit and listen to his lesson, (which is included in the accompanying article). The real lesson of course is not the words of the doctor but the physical suffering and lingering shame at the consequences of their actions, which are also the medicine required for its cure: "You will

sell your honor and your reason for a little wine, [and] leave behind a thousand heartbreaks…take your medicine and thank *Tabib al-A'ila*."[395]

Condemnations of alcohol and overconsumption were common enough. But some authors took a different, more nuanced approach. *What Ibn Hisham Saw: or a Period of Time* by Muhammad al-Muwaylihi is nominally a fantastic tale about a long-dead man (the Pasha) who rises from his grave while the narrator, Isa Ibn Hisham, is taking a lazy walk in the cemetery at night. [396] The Pasha died during the time of Muhammad Ali, and modern turn of the century life is a constant shock. But the novel functions more as a phantasmagoria of urban modernity, in which raucous celebration frames key aspects of modern existence. Isa Ibn Hisham describes several occurrences in which drunken revelry ends in regretful behavior. At a wedding, rampant overconsumption by all leads to the tricky and exhausting logistics of dealing with drunken guests (while being drunk):

> The crowd and crush kept getting worse. No one could turn either to left or right without finding a glass of wine or a slice of meat either beside him or on his

[395] The accompanying article titled "Alcohol at Sham al-Naseem" is a mixture of a poem, a diatribe on the behavior of drunks during Sham al-Naseem, and some advice on how to handle a very drunk person. The remedies of the family doctor include inducing vomiting, rest, warm water, and staying away from alcohol altogether, for after all, it is a poison. The articles in *Tabib al-A'ila* often follow this format, especially the longer ones about moral subjects.

[396] All translations of this text in this chapter come from: Muhammad Muwaylihi, *What 'Isa Ibn Hisham Told Us, or, A Period of Time*, 2 vols, trans. Roger Allen (New York: New York University Press, 2015). The author was a member of the intellectual elite of Cairo and published the episodes in this book first in the newspaper he and his father owned, *Misbah al-Sharq*. The newspaper ran weekly from 1898-1903 and was considered notable for its elevated style of literary journalism. Many of the people described in *A Period of Time* Muhammad knew personally, and the events are likely based (loosely) on his own experiences. For example, the section in volume 2 in which Isa and the Pasha visit Paris was written after Muhammad's visit for the Paris Exposition. He was a fervent nationalist, pan Islamist, and critical of Al-Azhari educated scholars. See Roger Allen's introduction in volume 1 for more on Muhammad al-Muwaylihi and his family. Interestingly, *A Period of Time* was compiled by the Ministry of Education and distributed as part of secondary school curriculum.

> clothing. Eventually stomachs were filled, eyes turned red, necks began to droop, and people began to stare…the covers came off every kind of vice. While one person vomited words, another did the same with food. There was no food or drink left on the tables, so people began shouting…to bring more drink … [the servants] told him all they had left was a single case of wine which had just been requested in the harem…[397]
>
> We left [the wedding and] once outside we found people cursing and punching each other…All joy now turned to sorrow, and songs of celebration were replaced by lamentations. The police arrived to put an end to the fights, and people found themselves on the way to the courts. Thus end all joyous occasions.[398]

The last line quoted above plays both sides. It simultaneously condemns overconsumption, as does *Tabib al-A'ila*, but also admits that alcohol is a part of any good party. At the wedding and elsewhere, the Pasha is both scandalized and fascinated by the behavior he witnesses. People express little compunction with condemning moral impropriety while holding a glass of wine. Muhammad al-Muwaylihi's vignettes perpetuate such ambivalent, contradictory aspects of modern life through lurid, expansive prose that links behavioral and bodily slippages with dastardly ease. Drinking, vomit, shouting and fighting are all part of the revelry; and much more delightful to describe and read about than a quiet and polite affair.[399]

Dangerous, Misused, and Unproductive Water

Partygoers at al-Muwaylihi's wedding may have spent the next day like the supplicants in the final frame of the *Tabib al-A'ila* cartoon, but Purser was not so lucky. Another similar yet far more gruesome incident occurred in 1897 to John McQuillam, a

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[397] Al-Muwaylihi, *A Period of Time*, vol 1, 359.

[398] Ibid, 363.

[399] For a fascinating discussion on al-Muwaylihi and how he represents modernity, see: Samah Selim, *Popular Fiction, Translation and the Nahda in Egypt* (Cham: Springer International Publishing AG, 2019), 71-95.

fireman aboard the S.S. Alma. Similar to Purser and his friends, McQuillam went out drinking on a Sunday evening. The witness statements focus almost exclusively on McQuillam's death. According to McQuillam's two friends, the group arrived back at the quay after midnight and attempted to board the ship by moving across two requisite pontoons to the ship's ramp. One of the witnesses describes the pontoons as not too far from each other, one to two feet at most. But in the dark and because of his drunken state, McQuillam slipped and fell into the water between the last pontoon and the ship. As with Purser, the companions call out for him, but cannot see him in the dark. Efforts do not recover the body until almost four in the morning.[400]

This file includes three sketches of the occurrence, two plans, and a lateral view of the ship. All attempt to show McQuillam's path across water, each does so in a slightly different way. The most informative is the lateral view, which hints at the scale of the experience (fig. 4.16). Two large ships (one labeled so) tower over the pontoons which appear in plan, flat and tipped out to the viewer. The desired ship has two labels that refer to another of the drawings, indicating the before (a) and after deck (b) of the ship. The ladder that leads up from the pontoon to the ship is not pictured, but a small "x" in between "second pontoon" and the ship indicates where McQuillam fell into the water. Like the map in Purser's file, the desire to spatially unpack the unfortunate series of events is meaningful. McQuillam's fall from the bridge, even as that structure is not pictured, echoes the causeway that Purser never reached. Both suggest that mapping land and water (and their precarious position to one another) serves an important purpose.

[400] TNA FO 847/27/14: Inquest of John McQuillam, fireman SS Alma.

One final case referred to in a daily newspaper from 1900 serves to remind how such cases were generally publicized. This notice is longer than most, and reads in part:

> At four in the afternoon first of July some of the people of Abu Hummus saw a drowned body not more than 20 years old. It was caught up in the silt…in the Mahmudiya Canal. An official…was sent for and he thought that the individual had been drinking due to the color (of the body) …the body was sent to the hospital and the cause of drowning is still not confirmed.[401]

Drowning inquest reports and newspapers clippings necessarily present the worst outcome of living in an aquatic landscape. Inhabiting a watery traverse performing everyday activities, proper or otherwise, could lead to the bottom of the canal among the grasses and silt. The danger of water is compounded with a subtle, insidious implication that these people are to blame for their untimely deaths. Statements in Purser's file allude to a set of unspoken assumptions about the reason he died. Purser's friends and sergeant attempt to deflect this blame, declaring that he was not a drinker. These statements anticipate that Purser's death will be categorized in a certain way, as the (deserved) result of a set of specific, individual behavioral slippages, rather than a tragic accident.

Bourgeois propriety extended beyond appropriate social and bodily behavior to the proper classification and utilization of resources. This included classifying water spaces as safe/dangerous and productive/unproductive. We have seen this manifest itself in various ways in this dissertation already. In terms of the landscape of Alexandria and Ramleh, these binary constructions formed a part of British colonial and capitalist interventions in Egypt that led to a massive, sustained effort to foreclose open public water. As mentioned above,

[401] *Al-Alam* (July 4, 1910): 6. Abu Hummus is a small town to the southeast of Alexandria along the Mahmudiya Canal. *Al-Alam* was a daily newspaper published in Cairo founded in 1894.

intervention in Alexandria's water landscape was not new. The viceroys were very keen to use technology and labor to turn Egypt into a land of canals. British interventions were in part a matter of scale, in part a matter of recharting and redirecting capital flows. The resources gained from British investment in water infrastructure, for example, did not stay in Egypt.[402]

Additionally, colonial capitalist technocrats redefined water spaces in transactional terms. These sought to maximize efficiency to best extract resources.[403] Late nineteenth and early twentieth century laws show this trend clearly. Such laws *declared* canals public, while simultaneously forbidding any activity outside of irrigation, alimentation, and drainage. Controlling the water supply entailed regulation, policing, and punishment. By the mid-1890s, watchmen were employed to surveil the banks of the Mahmudiya Canal to make sure that no improper use was taking place, defined in part as dumping animal corpses and other matter into the water.[404] Officials justified this surveillance as to protect the public from itself, or rather those members of society they claimed would willfully or as a matter of ignorance "contaminate" potable water and cause the spread of infectious disease.[405] However, watchmen and investigators also searched for fishing nets and poles,

[402] See: Jakes, *Egypt's Occupation*, 36-57.

[403] The most lucid interpretation of the connection of efficiency, capitalism and technology is by David Harvey. See: Harvey, *Paris: Capital of Modernity*, 149-167.

[404] Municipalité d'Alexandrie, *Lois, décrets,* vol 1, especially 285, 350; Wizarat al-Ashghal al-Umumiya, *The Egyptian Canal Act* (Cairo: National Print. Office, 1890), 22; "Further Reports Respecting Cholera … Proceedings of the German Scientific Commission," 30. The latter collection of reports addresses in part the issue of corpses of animals in the canals, linked to a serious epidemic of bovine typhus.

[405] I discussed this above in my chapter on cholera.

unauthorized redirection of so-called public water, washing and bathing.[406] The discovery of bodies might accompany these efforts. In one case, a murder victim was found dumped in the Nile:

> …a body was found anchored to the shore of the Nile in a distressing state…the hands folded and tied with a shawl. A doctor was sent for and it turns out the man was strangled and thrown into the Nile (al-bahr). So [the doctor] wrote the necessary report. His name and family are not known. Perhaps an investigation will clarify the incident.[407]

In this case, water could not only cause death, but it could also conceal it. The perpetrator used water to hide evidence, hoping perhaps that the body would sink to the bottom or be slowly swept away on the current. In this way, water became dangerous not only for its ability to cause death, but for its potential to be misused. As a dumping ground, or a stash for a murdered body.

Mapping Water's Disappearance

From 1865 to 1930, the public water spaces of Alexandria contracted and disappeared. As discussed in chapter two, officials claimed one of the primary reasons for closing water sources was for the sake of public health, but capital interests had much to do with this change. At Alexandria this is no more apparent than through an analysis of a set of four maps from 1865, 1912, 1919 and 1930. These four include Alexandria and its suburbs rather than just the peninsula.[408]

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[406] Henri Lamba, *Code administratif Egyptien* (Paris: Librarie de la société du recueil sirey, 1911),16-17; *Canal Act*, 22.

[407] *Misr al-Fatat* (February 17, 1909): 3.

[408] There is a significant archive of nineteenth and early twentieth century maps of Alexandria, but the majority of these are limited to the peninsula. From the perspective of tracking water patterns this is problematic, as beyond the shores of the Mediterranean Alexandria's public water spaces (canals, lakes, ponds) were outside of this small area.

First, we return to the map of Mahmud al-Falaki mentioned above to visualize the water landscape of Ottoman Alexandria. Mahmud al-Falaki was a career government official, engineer, geographer and historian who, among other things, drew the first topographical survey of Egypt.[409] He also wrote a book on the history of Alexandria, and drew a map of the ancient city which appears frequently in popular and scholarly publications alike.[410] The map of 1865 Alexandria was part of this project. The scale is 1:5000 meters, making it the most detailed map of its time that I have yet uncovered.

Al-Falaki's map depicts a built-up peninsula surrounded by water (fig. 4.17). To the east of the city on the mainland is the suburb of Ramleh. Lake Hadra sits in the middle of Ramleh. It is connected to the Mahmudiya Canal by the narrow so-called Fakher Canal in which Alfred Purser drowned. There are numerous other watercourses that flow above and below ground, including a moat surrounding the old city walls (figs. 4.18, 4.19). Dozens of little ponds pop up close to canals. The function and history of these water spaces is not clear from this map. But considering their regular shapes and the history of Alexandria's problems with adequate freshwater they are likely man-made water storage sites for a variety of everyday needs. Alexandria had an extensive cistern system that remained functional until the second half of the nineteenth century.[411] These storage sites are integrated into the built environment with care, such as in a small village just inside the old city walls where over a dozen such structures of various sizes are visible (fig. 4.20).

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[409] Goldschmidt, *Biographical Dictionary of Modern Egypt*, 53.

[410] Mahmud al-Falaki, *Mémoire sur l'antique Alexandrie, ses faubourgs et environs découverts, par les fouilles, sondages, nivellements et autres recherches* (Copenhagen: Imprimerie de Bianco Luno, 1872).

[411] For example, see: "Les citernes," *Centre d'études Alexandrines,* accessed August 20, 2022, https://www.cealex.org/recherches/publi-en-cours/citernes/.

A 1912 map of Ramleh and Alexandria produced by the Survey of Egypt indicates only three major freshwater features: the Mahmudiya Canal, the Farkha Canal, and Lake Hadra (fig. 4.3). This map is 1:30,000 meters, much larger than al-Falaki's version. However, other evidence supports that the many little spaces dotting al-Falaki's Alexandria were depleted or removed over the fifty years separating the two map's production. In official government reports, the task of filling open water is systematically visualized as a series of numbers in a table. In the 1913 report of the Department of Public Health, for example, the number of ponds (birkas) filled is provided as a net total, a number of cubic meters, feddans (acres) and shares (fig. 4.21).[412] In this report and others like it, there are two different types of open water sources that require attention. The first was the small ponds that people cultivated for their own use or that were naturally occurring. The other was giant holes left over from construction projects, such as building railway embankments, which were filling with water and attracting mosquitoes. Both of these were considered a problem, and according to these reports needed to be filled. The government used unpaid prison labor to fill some of them.[413] For the rest, the Public Health Department devised a two-pronged strategy. First, it declared that any privately held pond declared unsanitary must be filled in. No compensation would be provided, and a fine could be levied if the task

[412] Wizarat al-Sihha al-Umumiya, "Annual Report on the Work of the Ministry of Public Health for 1913" (Bulaq: 1915). It is worthwhile to note that by this time these reports largely focused on the suburbs and hinterland. It is likely that by this time any ponds in urban areas had already been filled. Ponds in Cairo are mentioned frequently in public works reports until around 1902. A comparison of the *DE* map of Cairo and a 1930s version would likely visualize the same disappearances that I am describing for Alexandria. Unfortunately, a comparison is outside the scope of this chapter.

[413] "Al-Asima," *al-Ahram* (July 28, 1899): 1; "Annual Report on the Work of the Ministry of Public Health for 1909 (Bulaq: Government Press, 1910); "Annual Report on the Work of the Ministry of Public Health for 1911" (Bulaq: Government Press, 1912).

was not properly or promptly completed. Second, any person who filled in a lake on miri land (agricultural land leased by the government for cultivation), full land ownership would be transferred to the individual who performed the labor. [414] However, if it was not filled in properly or in the requisite amount of time, it could be taken and sold to private individuals or developers. The Public Health Department hired special investigators to inspect the land and make sure these rules were followed.[415]

We can glean from these documents that the shrinkage of water spaces apparent in a comparison of the 1865 and 1912 maps is not merely a matter of scale, but also a matter of considerable effort. One of the more striking changes is the shape of Lake Hadra (fig. 4.22). The causeway that led from Nuzha Garden to Mustapha Pasha Barracks is no more. A road runs along its path and Hadra sits only to the east of it. There are also a few important additions, like a formal garden with a pool along the remains of the old city walls and its moat now referred to as al-Shallalat (fig. 4.23). There is also a sporting club, and a water works. These water spaces represent the isolation and categorization of water. Potable water passed through the water works and then went underground through pipes to city taps and homes. The sporting club added a pool in 1936, providing a place for the middle and upper classes to swim and exercise.[416] Al-Shallalat had a shallow pool, a pleasing garden feature for proper bourgeois sociability. These separate spaces were intended to replace the multifunctional canals and lakes of the city and its suburbs.

[414] *Al-Ahram* (July 29, 1890): 2; *al-Ahram* (August 11, 1891): 2.

[415] *Al-Ahram* (April 17, 1893): 2; *al-Ahram* (March 9, 1894): 2.

[416] J-M.R. Oppenheim, "Le Sporting club: symbole et enjeu social," *Revue des mondes musulmans et de la Méditerranée* 46 (1987): 168–76.

The 1919 planning scheme map produced by William McLean, the chief engineer of the municipality, shows the primary reason for the closing of Ramleh's water spaces: the expansion of Alexandria (fig. 4.24). This scheme was published with a pamphlet that outlined the city's priorities. According to the text, these include a plan for public housing of one covered room and a courtyard per family. "Each hundred houses has a complete sanitary installation, including wash-houses."[417] There are to be many public parks within a reasonable walking distance to support the health of the population. In this plan, the majority of Lake Hadra is engulfed by prospective urban expansion (fig. 4.25). Indeed, a spine of road stretches timidly across a bay on Lake Maryut, continuing the trend to "reclaim" and develop the salt lakes of Alexandria and its suburbs into productive, developed land.[418]

Lake Hadra was officially closed and drained in 1924. In a short *al-Ahram* article from August 5 of that year, the anonymous author sets a curious tone. They note that no one has any right to whine about the draining of the lake, especially those living near it as they have been complaining for years about the state of its waters. Considering the absence of the canals that once fed and drained the lake, it is no surprise Lake Hadra was becoming unpleasant. The article's reference to complaints is reminiscent of demands to properly manage the Khalig discussed in chapter two. The article continues: "Because of its harmful water and the amount of space it takes up it will be transformed into a garden and a park that

[417] William McLean, *City of Alexandria Town Planning Scheme: Descriptive Note and Plan* (Cairo: Government Press, 1921), 8.

[418] Lake Aboukir to the southeast of Alexandria had been reclaimed and developed in the 1880s and 90s. For this project, see: Christina Pallini, "British Planning Schemes for Alexandria and Its Region, 1834-1958," in *Urban Planning in North Africa*, ed. Carlos Nunes Silva (Burlington: Ashgate, 2016), 187–203.

will benefit the people. It will be surrounded by buildings and extend the city outwards in this manner."[419]

The absence of Hadra is clear in a 1930 map of Alexandria. (fig. 4.26). Dotted lines for planned roads and a few traffic circles or public squares bisect the green-colored space. The map also depicts a multitude of delimited and regulated public and private water spaces, such as beach pavilions, small ponds and water features in public parks, and the corniche (fig. 4.27).[420] Likewise, activities such as swimming and sunning commercialized (commodified) water recreation and reinforced the stratification and exclusivity of social water spaces. Private beaches were provided with lifeguards. Prohibited spaces were not.[421]

There is no mistaking the patterns depicted in the maps above (fig. 4.28). Alexandria saw a dramatic loss of water as the city grew, as its people increased, and as its footprint spread across the land. Alexandria's singular mixture of salt and manufactured freshwater landscape was irrevocably altered through quintessential modern urban planning schemes that considered open space in essentialist terms. Uncultivated unproductive land, covered in water or otherwise, was to be occupied, parceled, sold, and developed. This included minor canals and social water spaces, like the one where Purser drowned.

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[419] "Tajfif Buhira al-Hadra," *al-Ahram* (August 5, 1924), 4.

[420] Laws dictating building dangerous and insalubrious institutions included baths and sea bathing establishments. These required permits, inspections of plans, and facilities. See: *Model Conditions Drawn up by the Department of Public Health for Certain Manufactories, Shops, Markets, Etc., Requiring Licenses under the "Etablissements Insalubres" Law* (Cairo: Government Press, 1919).

[421] For an excellent discussion of attempting (and failing) to criminalize water spaces in attempt to control access see: Mahdi Sabbagh, "Dispossession and Resistance in the Living City of Acre," *PLATFORM:*, May 2, 2022, https://bit.ly/3EsNDY1.

This process did not go unanswered, nor was it linear. Certainly, people continued to socialize on the Mahmudiya Canal and to use it for any number of other needs (figs. 4.29-4.31). Numerous photographs from the early twentieth century attest to its continued relevance as a social water space, not to mention for fishing, boating and other quasi legal activities such as bathing, swimming and gathering water.[422] Furthermore socializing in sanctioned spaces such as beaches certainly pushed and shaped social norms. Photographs from the 1930s-50s of people on the beach in Egypt suggest the playful creation of private social spaces, of the claiming of this new water space as decidedly their own (figs. 4.32-4.34). It is enticing to consider that these photographs suggest the aim to constrict social water space was not nearly so precise. People were not so easily delimited, and water slipped back into the public's reach.

Conclusion

This chapter has aimed to parse out some enticing relationships suggested in a drowning inquest file. The facts of the case, if such things can be so determined, display a number of meaningful social and corporeal slippages. Purser's file provides an opportunity to unpack the relationship between water use and social behavior, and to consider how they overlap with the slow and steady modernization process of water restriction, constriction, and eradication.

The end of the movie *Iskandariya, Ley*? is relevant here. Adel and Tommy's close friendship is one of the more complex in the film. It ends with Adel visiting Tommy's grave after finding out he had been killed in action. Tommy had survived Adel, survived drowning in alcohol or the Mediterranean, only to be killed in the war. It is a touching moment in the

[422] All of these were expressly prohibited by the municipal codes, as discussed above.

film, especially as the camera zooms in on the tombstone and we see Tommy's name and his badge number on a white granite slab. The scene switches back to a close-up of Adel's face, an echo of similar framing at the beginning of the movie when Adel drove inebriated Tommy to the bridge, intent on killing him. There is no water here; rather there is a bright, arid, quiet desert cemetery (fig. 4.35). The contrast in setting to the night their relationship began – on a bridge over the sea in Alexandria – is quite meaningful. It speaks to a loss, an ending, and perhaps a moment of electric clarity.

Conclusion. The Water Carrier Remains

Water Labor and its Representation

A 1923 photograph from the Akkasah Collection at the University of New York Abu Dhabi provides a suitable graphic closing to this dissertation (fig. 5.1). This project began with the water carrier and water carrying, a laborer and everyday task that spurred my research towards another way of understanding water infrastructure modernization in Egypt's cities beyond technocratic priorities. Urban water infrastructure was much more than pipes, pumping stations and taps. It was a space in which the myriad cultural associations of water were made, and remade, enacted, challenged, and often left unfinished and unresolved.

Such playful photographs are a romantic reinterpretation of the water carrier. The woman is likely a model, as the image is attached to a postcard (fig. 5.2) Other photographs in the Akkasah collection, however, are more likely families and friends playing dress up and having their picture taken in a photographer's studio (figs. 5.3-5.4). Such images would be shared privately among friends. This slippage in and of itself makes the model's photograph an apt choice to close this dissertation, as matters regarding water and water carrying are never what they seem. Indeed, the fluidity with which meaning is displaced and transposed, from the street to the object to the studio and back out again, is another type of infrastructure. Meanings that transform and evolve do not so easily break, and their histories, even as they change, are not so easily lost.

As a group these three photographs are selective and circumscribed representations of a certain social group's understanding of water carrying as something romantic, enticing, and a task and personage belonging to fantasy. These photographs romanticize the image of

the water carrier as a pliable and pleasing fiction.[423] Yet the sources I discussed at length in this dissertation poignantly indicate that water carrying remained part of everyday life for many at this time. The people buying, exchanging and sending the postcard would know this well, even if they were not usually carrying water themselves.

As such, this photograph also shows the way in which the labor of water carrying, what I am arguing is fundamental to water infrastructure, can be so easily hidden through crafty representations. This photograph, after all, was produced at around the same time as the numerous stereo prints of water carriers standing in line at taps that I examined in chapter one. They occupy the same historical space, perhaps even the same street. But they are not the same, not only because one is a staged photograph and the others candid offerings. Rather the problem of water labor makes such a comparison meaningful. For the model leaning casually against the pot the labor of water is elided, offset, even denied. The water carriers in the street holding their goatskin sacks are not offered such an opportunity. And yet it also does not suffice to see the water carrier as only a laboring body. After all, Yusuf al-Sibai's Shousha has dreams, holds keepsakes of his wife, and would likely find such a postcard tacitly amusing. She too knows little of the craft of the water carrier.

Dissertation Summary

In my introduction, I began with the claim that people and labor are the history of water infrastructure in urban Egypt. They cannot be divorced from the story of pipes and

[423] There are at least six examples in the Akkasah collection alone. There are likely many more examples in other collections both in and outside of Egypt. Yasser Alwan has discussed the process of collecting and understanding these vernacular photographs: Yasser Alwan, "Traces, Fragments, Scraps: Collecting Cairo's Discarded Images," *Jadaliyya - جدلية*, accessed June 24, 2022, https://www.jadaliyya.com/Details/34345.

pumping stations, rather they are foundational. This dissertation has aimed to bring forward the water carrier specifically, whether the professional saqqa or anyone else that had to carry water from Nile or tap to home out of necessity. The engineer and the scientist have dominated the history of modern water. This focus has obscured significant actors, significant moments, significant spaces in the history of modern urban water. My goal with this dissertation was to offer another narrative to this well-trodden history, to broaden the scope and stakes of histories of water. My rhetorical method in support of this goal was to follow thematic patterns of disruption. To this end, I divided the dissertation into two parts. The first part focused on life in water. Chapter one and two addressed potable water access, as well as celebration and labor in water practice. In chapters three and four, I have focused on instances of death in water. In this section, I considered cholera and drowning as occurrences that created disruptions in the process and rhetoric of water infrastructure modernity. Thus, water also began to be considered and characterized as dangerous.

Chapter one of this dissertation has shown that the water carrier and water carrying played an important role in bridging persistent gaps in modern water infrastructure, including the uneven distribution of public taps. By considering the mixed reception of public taps, as well as photographs of water carriers waiting in line from the 1930s, it is apparent that modern infrastructure was a complicated series of processes and people; pipes and other mechanical fixtures and structures formed merely a part of its system. This chapter aimed to disrupt a fundamental aspect of technocratic histories of water: that the engineer was the primary actor, that a specific type of expertise enabled change to take place. Indeed, metal pipes would have been no use without the water carrier.

In chapter two I delve further into the history of one of Cairo's ancient infrastructures, the Khalig al-Misri. This channel once bisected the city of Cairo, bringing water to its residents and its agricultural hinterlands. The channel was also an important social and cultural space that played a significant role in the celebration of the ceremony of the rise of the Nile. The closure of the Khalig and its transformation into a street was part of bacteriological view of the city that aimed to keep water out of view and under control, as well as a conception of the seasonal absence of water as a sign of an unproductive and empty space, waiting to be filled. These elite, largely colonial ideas were not accepted out of hand by the Cairene public. The loss of the canal was challenged even mourned. This chapter in part aimed to bring forward spatial and cultural practice as essential in understanding the stakes of modern urban transformations.

Chapter three investigated the complex entanglement of water and cholera. As advances in sanitation and medical science began to formulate definitions of good and bad water, proper and improper uses of water, managing cholera became a pursuit of people and a desire to control the private spaces of the home as much if not more than distributing clean water to manage disease. This entanglement was not lost on the public, who routinely resisted attempts to control water and enter the home under the auspices of cholera sanitation procedures. This chapter aimed to bring forward the importance of paying attention to the archive of resistance when considering the history of disease. The reactions of the people of Cairo and Alexandria to cholera sanitation procedures are meaningful and indicate a multifaced understanding of the goals of government officials in following water into the home.

In my final chapter, I delve into public drunkenness and drowning as key to understanding the process of parsing water and of surveilling and legislating behavior around and in water. A fundamental reorientation of the stakes of drowning occurred under British colonization that transformed conversations about drowning into discussions of public propriety and modern sensibility. However, sources show us that water and bodies remained intertwined in Egyptian discourse and practice, challenging attempts to classify and codify behavior in and around water in concise and precise terms. The spatial complexity of urban water further challenged efforts to define and domesticate proper water sociability. Even as properly surveilled water sports emerged, people continued to socialize along canals and drown in their waters.

The four thematic chapters of this dissertation as a group contribute to infrastructure studies, the history of water and resource management, urbanism, and resistance. Each chapter engages with scholarship and method in these fields through the path of the water carrier, and through the body and how it moved within urban space. In many instances this was a noncompliant journey. There were persistent challenges to the government sponsored capitalist plan of water infrastructure modernization. My research has shown that there was much dissent, enacted in myriad creative ways. These reactions are not alternate histories to the history of water, rather they undergird any history of water, and are no less important than narratives that describe the acts of engineers, bureaucrats, and technocrats. Both enabled and sustained change in the modern urban environment. The guiding figure of the water carrier, as both the person who carried water on their back or in their body suffuses the logic of these four chapters, as anyone and everyone could be a water carrier. The body

of Alfred Parser described in chapter four is particularly notable in this sense. Water could be carried, water could carry. Water brought life and ended it.

Opportunities for Further Research

Completing a dissertation during a pandemic that limited my access to travel and other resources was a challenge, but if anything, it proved that we still have much to learn, even from sources that appear with frequency in many studies of Egypt at this time. Ali Mubarak's *Khitat* and the British reports on the cholera epidemics are especially significant in this regard. Neither have been used previously to interrogate water history, even as water features prominently in both sets of documents. Theis leaves an astounding array of potential exciting possibilities for further study in urban Egyptian water infrastructure, even with texts easily accessible in most university libraries, or digitized online.

Further studies will hopefully continue to use the vast and understudied visual archive of urban water. Maps, photographs, drawings, and other objects such as clay pots or taps can be used to build a material history of water that was profoundly haptic, tangible, and corporeal.[424] Further research will hopefully take advantage of the court records available at the Dar al-Watha'iq to better understand the legal complexities of water rights, water use, and how breaking water codes was viewed and managed in the court system.[425]

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[424] Margaret Graves' work on medieval portable water objects is relevant here. See: Margaret Graves, *Arts of Allusion: Object, Ornament, and Architecture in Medieval Islam* (New York: Oxford University Press, 2018), 181-213.

[425] It is important to mention that there was not one court in nineteenth and twentieth century Egypt. To put it simply, there were three court systems, the Native Courts, the Mixed Courts, and the Consular Courts. For a discussion of the mixed courts and European corporations, see: Mai Taha, "Drinking Water by the Sea: Real and Unreal Property in the Mixed Courts of Egypt," in: *The Extraterritoriality of Law,* Edited by Daniel S. Margolies, Umut Özsu, Maïa Pal, Ntina Tzouvala (Routledge, 2019), 119–33.

Waqfiyyat stored at various archives in Cairo, including the Dar al-Watha'iq and the Dar al-Mahfuzat, are another underutilized rich source that can help us better understand the intersection of charitable institutions and the landscape of underground pipes and taps that emerged around and among sabils.[426] In terms of architectural and urban history, there are many opportunities to investigate how early twentieth century housing projects incorporated water infrastructure, both in terms of design, implementation, and in advertising. Magazines and newspapers, a source I used frequently in this dissertation, remain largely untapped in these terms.

The water carrier as an individual, a laborer, an idea, and a protagonist resonates within and through a multitude of sources. These echoes remind us that while water access has a history, with a specific context, its core challenges remain familiar, even unchanged. Water infrastructure modernization continues in urban Egypt, its uneven beginnings reflected in continued struggles for reliable access to clean water. A final example produced about 100 years after the British invaded Egypt will serve to make this point. In the opening scene of the 1984 Mohamed Khan film *Kharaga wa lam Ya'ud* (Missing Person), the protagonist Atiya, a low-level bureaucrat, attempts to turn on the water in his bathroom after waking up in the morning (fig. 5.5).[427] Not a drop emerges, not clean water not dirty water, nothing. Atiya looks up into the mirror and says with sarcasm: "Sabah al-Nur (Good morning)," nominally in response to the tinny radio voices in the background, but mostly to the audience, who are meant to understand such an issue as a normal, everyday occurrence

[426] For fascinating explanation of the location of waqfiyyat and similar documents in Cairo, see: Daniel Crecelius, "The Organization of Waqf Documents in Cairo," *International Journal of Middle East Studies* 2, no. 3 (1971): 266–77.

[427] Mohamed Khan, *Kharaga wa lam Ya'ud*, (Maged Films, 1984).

for many people living in Cairo. There may have been a tap in many Cairene apartments by 1984, but a metal tap is a useless metal fixture without water. Atiya thus becomes a water carrier, due to a different set of historical circumstances perhaps, but ones many in 1930s Egypt would recognize. The water carrier remains, and anyone can be/become a water carrier.

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