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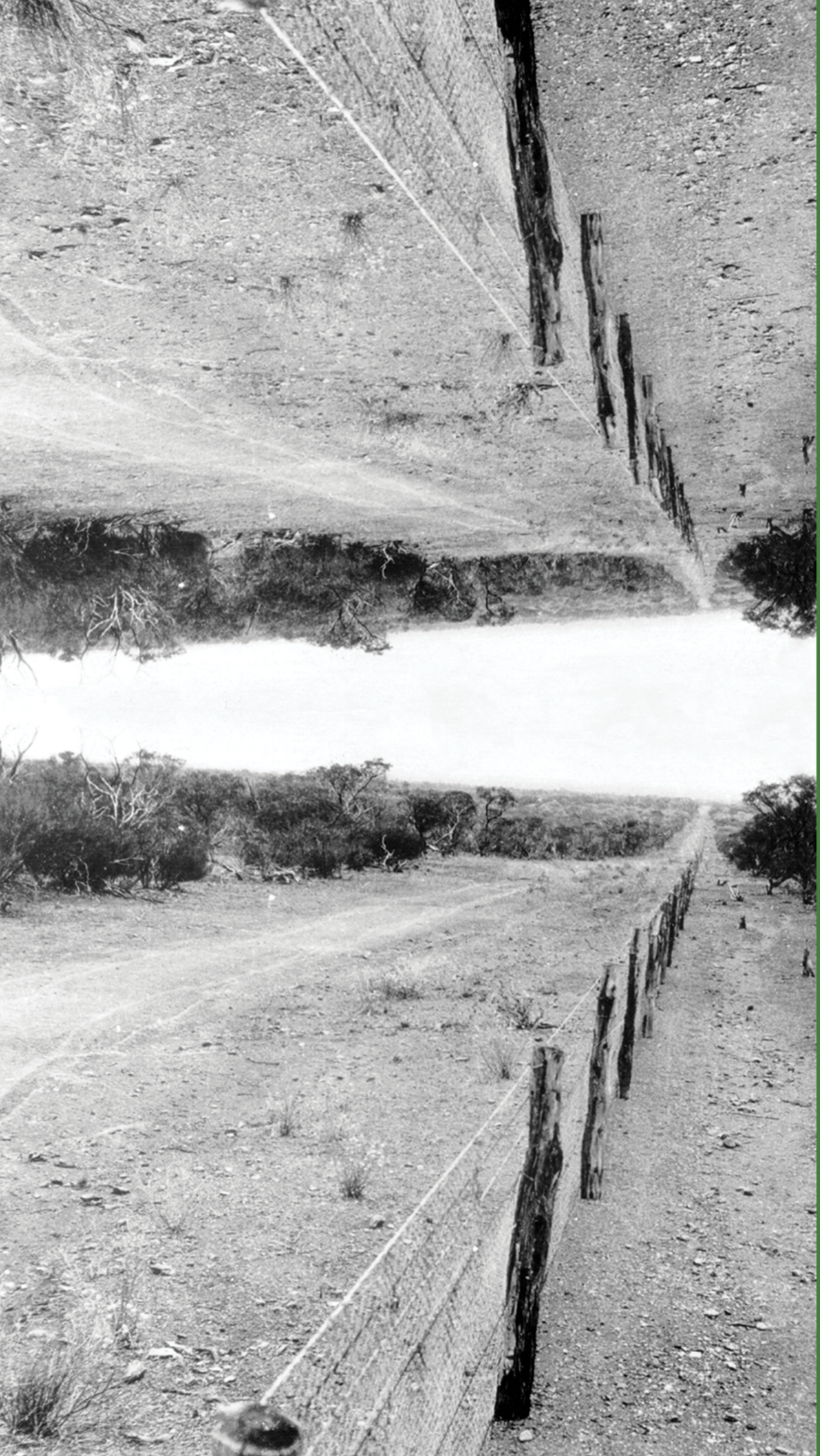
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research spotlight

Un-Mapping Water Labor: Quantitative Slippages in Occupied Cairo

Alex Schultz

Research(ing) and Resistance

Like any doctoral student, I wanted to write a compelling dissertation with meticulous archival research. The archive is often defined as the state's official depository of administrative documents. In my case, the National Archives in Egypt has somewhat mythic status: an object of perennial desire that can prove frustratingly difficult to access. And yet, there is a frequently expressed fear among students that a dissertation written without this experience is insufficient.¹ I had plans to use the National Archives to reconstruct a history of urban water. Instead, things turned out differently. When Covid-19 hit in 2020 I had a two-year-old son, and my daughter was born in July of that same year. Caring for young children among myriad covid restrictions foreclosed a return to Egypt, official security clearances in hand or otherwise.

It was imperative at that stage to make new plans. I started with photographs and archival research from a previous trip, including a slew of precious digital copies of maps from the Centre des Études Alexandrines. I explored digitized photograph and

¹ The National Archives in Arabic is the Dar al-Watha'iq al-Qawmiyya. I was not able to visit either for my dissertation research, but plan to go (government approvals permitting) in winter of 2023 and summer of 2024. Any scholar of modern Egypt has a story about accessing the archives. For one narrative, see: 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.

archival collections.² I scrolled through Eastview’s Middle Eastern and North African Newspapers and *al-Ahram* digital archives, seeking any references to Cairo and Alexandria’s municipal water systems.³ As it turned out, an unexplored narrative of local water practices resided in many different places and objects outside of the official government archive, including photographs of water carriers, a sentence or two in local news sections on public taps, notices of drowning deaths or water syphoning in police columns, and advertisements about water cleansing tablets.

British colonial reports are widely available online. These often contained brief yet tantalizing discussions of the tension between local water practices and modern bureaucratic methods of water management. In the 1898 edition of a Public Works Department report that I downloaded from HathiTrust, a government official argued that an accompanying “plan” visualized the challenges of managing rainwater removal in Cairo (see figs. 1 and 2):

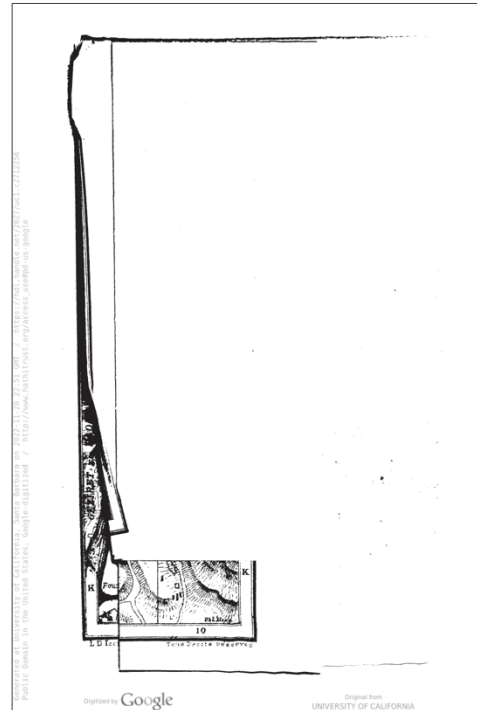


Figure 1. Folded-over map page in digitized book. Source: Ministry of the Interior, *Report on the Department of Public Works 1898*, Bulaq: Government Press, 1899. Digitized by Google.

Work, during wet weather, or when a large pipe breaks, is the most difficult of any undertaken by this service (the Scavenging Department), and is still very unsatisfactory. The attached plan, showing the amount of water and mud removed after the heavy rain of the 12th of November will give a fair idea of the work that we have to carry out.⁴

² Calisphere, “Calisphere: The deeper you look, the more you discover,” accessed November 20, 2022, <https://calisphere.org/>; Victoria and Albert Museum, “V&A Explore the Collections,” accessed November 20, 2022, <https://www.vam.ac.uk/collections>; Bibliotheca Alexandrina, “Thakirat Masr al-Mu’asira,” accessed November 20, 2022, <http://modernegypt.bibalex.org/collections/home/default.aspx>.

³ Al-Ahram archive is available only through paying institutions. Select titles of other papers can be viewed for free. All titles are part of Eastview’s Global Press Archive. For more information: “Global Press Archive,” *East View* (blog), accessed November 20, 2022, <https://www.eastview.com/resources/gpa/>. For an overview of the press in the Middle East see: Ami Ayalon, *The Press in the Arab Middle East: A History* (New York: Oxford University Press, 1995); for the press in Egypt, see: Beth Baron, *The Women’s Awakening in Egypt: Culture, Society, and the Press* (New Haven: Yale University Press, 1994); and Hoda A Yousef, *Composing Egypt: Reading, Writing, and the Emergence of a Modern Nation, 1870-1930* (Palo Alto: Stanford University Press, 2016).

⁴ Egypt, Ministry of the Interior, *Report on the Department of Public Works 1898*, 220.



Figure 2. Map of Cairo, undated. Source: Ministry of the Interior, *Report on the Department of Public Works 1898*, Bulaq: Government Press, 1899.

Insufficient Drains

Cairo's notorious late nineteenth-century drainage problem was a matter of scale, as well as systemic neglect.⁵ Its population exploded during this time as people pursued new business and labor opportunities.⁶ An increase in the number of middle-class and wealthy inhabitants provided service opportunities for the working class. Poor

⁵ Two excellent studies: Ghislaine Alleaume, "Hygiène Publique et Travaux Publics: Les Ingénieurs et l'assainissement Du Caire (1882-1907)," *Annales Islamologiques* 20 (1984): 151-82; Shehab Ismail, "Engineering Metropolis: Contagion, Capital, and the Making of British Colonial Cairo, 1882-1922," Ph.D. Diss, Columbia University, 2017.

⁶ 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), <http://ebookcentral.proquest.com/lib/ucb/detail.action?docID=3408424>; Joel Beinin and Zachary Lockman, *Workers on the Nile: Nationalism, Communism, Islam, and the Egyptian Working Class, 1882-1954* (Princeton: Princeton University Press, 1987).

migrants and locals performed necessary low-wage day labor, such as construction and street sprinkling, the latter a necessary daily task to settle Cairo's dirt streets and alleys.

This population increase put a strain on Cairo's water and waste infrastructure, which prior to this period was largely localized and informal.⁷ Nightsoil men, *zabbalin* (garbage men), and scavengers managed the brunt of the city's sanitation.⁸ For example, they collected and sold the city's solid waste locally, to public bath proprietors for valuable boiler fuel, and to farmers for fertilizer. Under this system, waste was a valuable natural resource and a way for Cairo's poor to make ends meet.⁹

But British colonial officials represented Cairo's waste removal system as antimodern and offensive.¹⁰ For example, in the 1899 issue of the Public Works Department Reports, a table ranks Cairo's public baths, rated from "fairly clean," to "extremely dirty" (fig. 3).¹¹ Perhaps as evidence, the author lists in his table the amount of cubic meters of rubbish (fuel) stored in and around the bath. It is not clear from the report how such numbers are derived. Indeed, the labelling admits that it is guesswork: "estimated amount of rubbish stacked and in place for many years."¹² Although the author notes that the baths are efficient and multifunctional, he does not consider them as essential public service charitable institutions that provided places to bathe, socialize,

⁷ Janet L. Abu-Lughod, *Cairo: 1001 Years of the City Victorious* (Princeton: Princeton University Press, 1971), 70-74; Amin Sami, *Taqwim al-Nil* (al-Qahira: Matba'at al-Amiriya, 1915), vol. 3, no. 2, 858-859; 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>. For more information on the potable water system, see my dissertation: Alexandra Schultz, "Living and Dying in Water: Fluid Infrastructure Disruptions in Urban Egypt (1870-1935)," Ph.D. diss., University of California Santa Barbara, 2022.

⁸ Until recently, the city's *zabbalin* were largely members of the Coptic community living in a suburb of Cairo near the Moqattam Hills. They have a reputation of being extremely efficient, but recently the government has sought to do away with the system, in part saying that there is too much garbage in the neighborhood streets where the *zabbalin* are sorting. See: Amelia Soth, "Cairo's Zabbaleen and Secret Life of Trash," *JSTOR Daily*, November 30, 2022, <https://daily.jstor.org/cairos-zabbaleen-and-secret-life-of-trash/>.

⁹ Chalcraft, *Striking Cabbies*, 70.

¹⁰ The accounts are so numerous that they form a trope. Government publications, such as the reports of the public works department or the reports of the public health department frequently address the baths in a negative fashion. One useful source: Abbate Onofrio. "Questions hygieniques sur la ville du Caire." *Bulletin de l'Institut Egyptien* 2, no. 2 (1881): 55-69. It is worthwhile to note that nightsoil men were still an important part of most European cities at this time as well, including London and Paris. See: David Barnes, *The Great Stink of Paris and the Nineteenth-Century Struggle against Filth and Germs* (Baltimore: Johns Hopkins University Press, 2006).

¹¹ Egypt, Ministry of the Interior, *Report on the Department of Public Works*, 1899, 277-279.

¹² Egypt, *Report on the Department of Public Works*, 1899, 278-279.

cook and sell food, and recycle waste.¹³ Despite this and similar concerns, the British seemed in no hurry to pay to maintain or improve public works, such as dredging Cairo's main canal, building storm drains, or installing sewers.¹⁴ Indeed, a sewage collector was not installed in Cairo until 1907.¹⁵ Cheap, uneven logistical responses to catastrophic situations such as rare torrential rain were the rule.

LIST OF NATIVE BATHS IN CAIRO.

No.	Section No.	HAMMAM.	LOCALITY.	Estimated amount of rubbish, stacked and in place for many years.	REMARKS.
				Cubic metres.	
<i>In Section I.</i>					
1	1	El Dahabeh	Bab el Fetouh Fagallah. . . .	82	Very dirty. Rubbish in space behind bath.
2	2	El Bishri	Bab el Fetouh Fagallah. . . .	199	Fairly clean.
<i>In Section II.</i>					
3	1	El Charaoui	Chareh el Charaoui el Gomani	188	Very dirty.
4	2	Amir el Giouche	19, Chareh Amir el Giouche el Gomani	18	(Hearst No. 23). Very dirty.
5	3	El Gamalyeh	16, Chareh el Gamalyeh	26	Very dirty.
6	4	El Salehiah	Haret el Salehiah	72	"
7	5	El Eloni	Chareh el Channaouani	36	"
8	6	El Makassisse	Chareh el Makassisse	33	"
9	7	El Nahhassine	Chareh el Nahhassine	52	"
10	8	El Bisri	Chareh el Khoronfeche	173	"
11	9	El Yhoud	Chareh Mahmoud	86	"
12	10	El Sultan	6, Zadak el Mestaoukad	170	"
<i>In Section III.</i>					
13	1	Gamé el Ahmar	26, Sharia Gamb el Ahmar	111	Very dirty: keeps refuse on both sides of the street.
14	2	El Hadrah	Haret el Hadrah	227	Extremely dirty.
15	3	El Kharratine	4, Darb el Mestaouked	203	"
16	4	El Tambali	24, Darb el Mahkamah	393	"
17	5	El Antaret el Guiedida	16, and 17, Chareh Antaret el Guiedida	62	Very dirty.
<i>In Section IV.</i>					
18	1	El Telata	6, Chareh Hammam el Telata	240	"
19	2	El Sharabi	16, Chareh el Hamzaoui el Kebir	185	"
20	3	Sabaa Kaat	77, Haret el Sabaa-Kaat el Kebir	46	"
21	4	El Sanadieh	7, Attet el Taouil	125	Not working.
22	5	El Halwagi	101, Chareh el Sakkeh el Guiededah	6	Dirty.
23	6	El Mastagha	13 and 15, Chareh Hammam el Mastagha	23	Very dirty.
24	7	El Kahkine	Attet el Hammam el Chouriah: off Chareh el Kahkine	70	"
25	8	El Guibeli	11, Attet el Guibeli 10, Haret el Hammam (two entrances)	23	"
26	9	El Soukarieh	16, Attet el Alaïli	133	"
27	10	El Manissareh	18, Haret el Amir Hussein	63	"
28	11	El Soorogieh	Haret el Hennah	50	"
29	12	El Doude	Chareh Mehemet Aly	70	Fairly clean.
30	13	Souk el Selah	3, Chareh Souk el Selah	361	Dirty.
31	14	El Bachtak	Attet Hammam Bachtali	131	Very dirty.
32	15	El Wazir	4, Chareh el Wazir	18	"
33	16	El Roum	38, Chareh Darb el Ahmar (rubbish at 5 Haret el Roum).	81	"
34	17	El Kerabiah	Chareh el Kerabiah (opp.No.12)	172	"

Figure 3. Table of Baths (Hammams) in Cairo, numbered, named, and rated. Source: Ministry of the Interior, *Report on the Department of Public Works 1899*.

¹³ Most could afford the meager charge of one piastre or *qirsh* (1/100 of an Egyptian pound) to use the bath regularly. Egypt, Report on the Department of Public Works, 1899, 277; Dalila El Kerdany, "Hammam Folklore Dynamics in Cairo: Lessons from Operation to Regeneration," *International Journal on Architectural Research*, 2, 3 (November 2008): 29-41.

¹⁴ Cairo did not have a separate municipal budget until the 1930s, thus its expenses were controlled directly by the Public Debt Commission, a committee composed of colonial officials to extract investor's funds from the bankrupt country. For more on this, see: Aaron Jakes, *Egypt's Occupation: Colonial Economism and the Crises of Capitalism* (Stanford, California: Stanford University Press, 2020).

¹⁵ See, Ismail, "Engineering Metropolis," especially chapter three. The map of the project was printed in the 1911 report, but like the map under discussion was not unfolded for scanning by the google digitizer. The map is available on Madaq. See: "1911 – Drainage Project," al-Madaq, accessed November 20, 2022, <https://bit.ly/3UVO02L>.

Maps and Tables as Representations

Let's return to the rainstorm mentioned at the beginning that occurred on November 12, 1898, and the plan the report's author suggested would clarify the Scavenging Department's challenges. Like many google-digitized resources on HathiTrust, the scanner had not unfolded the page to scan the plan (fig. 1). I ran across this problem frequently, including in my search to uncover plans and diagrams of water works such as dams and weirs. (fig. 4). I came to expect it and consider it a pattern that likely represents valuing quantity over quality, and the textual over the visual. So, I requested a high-resolution digital copy from UC Berkeley through interlibrary loan (fig. 2).¹⁶ I am not sure what I expected, but it turned out to be a fairly typical map of Cairo with some minimal citations. The clarification it provided was perhaps not what the author intended. Indeed, the map itself was quite useless without its corresponding table, a necessary aid the quote above does not mention. But what information does the map convey, and how?

Maps of Cairo typically do not indicate individual building footprints. One example is the Grand Map (fig. 5). Like the map from the report, few if any individual building footprints are legible. Rather, Cairo emerges as a pattern of bent and irregular passageways, encasing correspondingly irregular blocks, presumably sets of closely-packed buildings (figs. 2 and 6). There are three different types of numbering systems on the map: 1) small, thin numbers that correspond to an absent list of street names, 2) short, bold numbers placed near monuments that likely refer to the same absent key, this time a list of monuments or sites of interest, and 3) large, bold serif numbers from 1-32 that cluster in the newer western suburbs of the city, such as Azbakiya (figs. 2 and 7). The latter group of numbers refers to the table (fig. 8), which compares the amount

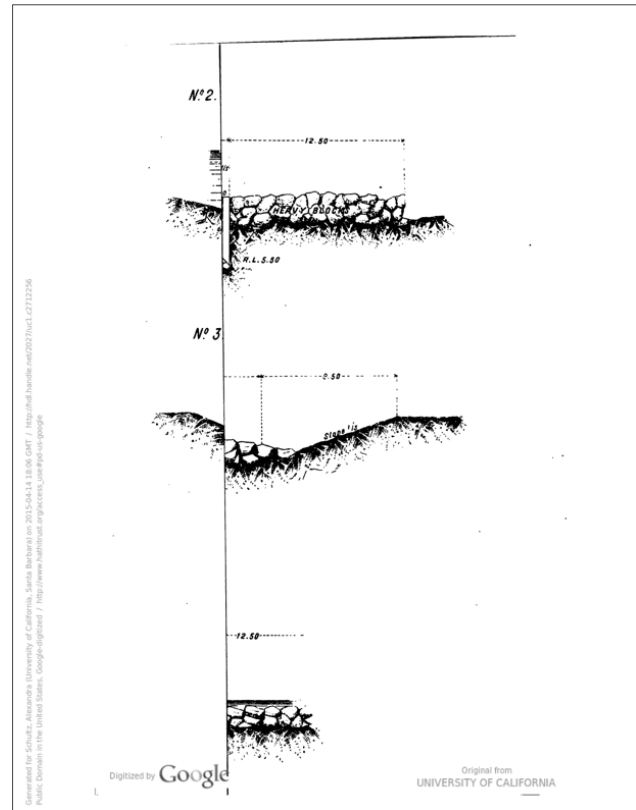


Figure 4. Folded-over scanned insert of a weir (small dam). Source: Ministry of the Interior, *Report on the Department of Public Works 1898*, Bulaq: Government Press, 1899. Digitized by Google.

¹⁶ Egypt, *Report on the Department of Public Works 1898* (Bulaq: Government Press, 1899). Unpaginated, inserted between pages 20 and 21.

of rainwater and dust removed by men to that removed by machine. There are two sets of three columns. The first group of numbers corresponds to those on the map, and two columns to the right indicate the number of carts removed of water and dust. For example, 2,347 carts of water and 64 carts of dust were removed by machine pump from location 15, an area on the map near Ibn Tulun mosque, an upscale neighborhood with many large homes of local nobility, including the seventeenth-century Ottoman Manzil Kritliyya (figs. 7 and 9). This number is the highest of those listed in the table, but what exactly that means is not clear. Does the number refer to all rainwater removed from that neighborhood, or only from the area over which it hovers, the plaza in front of the Mamluk madrasa of Sarghitmish?



Source gallica.bnf.fr / Bibliothèque nationale de France

Figure 5. A typical detailed map of Cairo produced by the director of the Voirie (Roads) Department. The pink blocks are buildings. The box in the lower left is a key that indicates mosques and churches in the city. The plan includes the names of some roads, major buildings (such as palaces, government buildings), and historic sites. Plan général de la Ville du Caire, 1874. Dressé et publié avec l'autorisation de S.A. Ismail Pacha Khédivé d'Egypte par P. Grand Bey. Source: Bibliothèque nationale de France, Département Cartes et Plans, GE C-10010.



(left) Figure 6. This photograph shows a street in Old Cairo. Most people are blurry as they are moving, whereas the buildings are distinct. This was a limitation of photographic technology at the time. Beniamini Facchinelli, *Strada Bab El Bahr*, c. 1873. Source: Bibliothèque nationale de France, Département Estampes et Photographie, BOITE FOL B-EO-1717.

(right) Figure 7. Map of Cairo, undated (also seen in figure 1). Additional annotations made by the author include neighborhood and cite names in white on gray, and blue and purple dots to highlight locations of rainwater clearance. Red circles indicate water and dust removed by hand pump or machine, purple by hand (as per table, figure. 8). Source: Ministry of the Interior, *Report on the Department of Public Works 1898*, Bulaq: Government Press, 1899.

How many laborers did it require to handle one of the hand or machine pumps, and how many worked to fill the carts labeled “filled by men?” What tools did they use, how big was a cart, and was the cart moved by animals or also by men from the flood site? Rain clearance policy, as well as its logistics, is elusive in this pair of documents. Indeed, without the table the map tells us only one thing for certain. Clearance was selective, and focused on the newer western districts of Cairo, areas with high percentages of Ottoman and Egyptian elites and Europeans. No clearance of rainwater was attempted in the old city, by far the densest and most populous area of greater Cairo (see fig. 7). The majority of the city’s residents, it would seem, did not benefit from the Public Works Department’s efforts.

Quantitative Othering

It was not uncommon for colonial British reporting to quantify people as productivity.¹⁷ After all, a primary goal of colonization was resource extraction. The British colonial government ran Egypt like a corporate enterprise, thus its goal was to earn a profit off its “investments.” The budget and financial statement are typical examples. For a government, a budget ostensibly estimates surplus or deficit. Officials can scrutinize actuals at the end of a fiscal year to determine whether a department is performing optimally. However, such calculations are not objective, but representations of values within a particular system.

Tables provide a neat grid in which data can be placed and calculated. The form of a table has rhetorical value and presents data as logical. In my case, a table presents people (manual labor) and machine as opposite, and the latter as more efficient. After all, the table shows that hand and machine pumps clear more carts of water and dust than manual labor alone. However, machines and manual labor are not so distinct. In the same report, narrative descriptions of labor muddle the table’s argument, even as they also represent Cairo’s laborers as inefficient: “There is a great scarcity of drivers [for the scavenging department], and those that offer themselves are usually of a very bad class. They require looking after, and are a continual source of anxiety.”¹⁸ Like the table, these narrative descriptions orientalize and dehumanize the

TOTAL AMOUNT OF CARTS WORKING ON THE 12TH NOVEMBER, 1898, AND THE FOLLOWING DAYS IN THE WET WEATHER.

<i>Carts filled by Hand Pumps and Machines.</i>			<i>Carts filled by Men.</i>		
NUMBER*	WATER	DUST	NUMBER*	WATER	DUST
7	673	42	1	368	22
8	446	26	2	92	17
9	783	29	3	37	9
10	1,331	42	4	437	22
11	1,781	34	5	173	20
12	622	25	6	19	6
13	972	30	21	113	22
14	1,563	42	22	104	17
15	2,347	64	23	87	13
16	62	7	24	63	15
17	713	38	25	89	32
18	73	43	26	42	12
19	32	19	27	117	8
20	86	18	28	132	27
20 bis	738	32	29	19	6
			30	23	5
			31	26	20
			32	16	8
			33	14	6
			34	72	23
Total.	12,222	491	Total.	2,043	310

* The figures in this column refer to those on map opposite.

Figure 8. Table corresponding to map in figure 1. Source: Ministry of the Interior, *Report on the Department of Public Works 1898*, Bulaq: Government Press, 1899.

¹⁷Aaron Jakes has recently shown how British colonial officials held a highly reductive and quantitative understanding of Egyptian self-regard. This was part of colonial economism employed in Egypt at the time. See: Jakes, *Egypt's Occupation*. For statistics in India, see: Sreenivas, *Reproductive Politics*. For the use of statistics to quantify slave labor, see: Caroline Oudin-Bastide and Philippe Steiner, *Calculation and Morality: The Costs of Slavery and the Value of Emancipation in the French Antilles*, Oxford Studies in the History of Economics (New York, NY: Oxford University Press, 2019).

¹⁸ Egypt, *Report on the Department of Public Works*, 1898, 221.

people resisting the Public Works Department and its officials. But they also show that machines were useless without them.



Figure 9. Manzil Kritliyya/Gayer-Anderson Museum. This is an example of a seventeenth-century house for an Ottoman notable, such as a bey or a pasha. The mosque directly abuts the Ibn Tulun Mosque (just south of number 15 on map, figure 2 and 7). Cairo, 2014. Photograph by author.

Qualified Absences

The map, table, and descriptions present at least two narratives: the claim that manual labor was inefficient for managing Cairo's drainage, and that the people resisted unilateral so-called sanitation practices, especially as such practices often left them in the dust.¹⁹ But resistance is represented in the report from the perspective of a British colonial official. I needed alternative perspectives, and I knew that Cairenes were not shy about sharing their disapproval of the British government and its agencies in newspapers. Fortunately, I had a very specific date to work with: the rainstorm occurred on November 12, 1898.

¹⁹ I argue in more detail in my dissertation that subaltern resistance defines water access in urban Egypt. My archive is a collection of representations of these instances of resistance. See: Schultz, "Living and Dying in Water."

Al-Ahram staff reported on the rainstorm and its challenges in the local news section of the paper. The first mention is on November 14, 1898, and reads in part:

Cleanup work continued today in the capital to clear the water and mud from the rain. We thank the department for paying attention to this. Particularly Mr. Bray the head (of the department) who oversaw the project himself. However, the work is not sufficient for the mud and water as the rain that fell from the sky turned the streets into rivers. This matter first and foremost brings attention to the problem of running water and the need for drains.²⁰

The language and syntax of this short article is very similar to others of its kind. It acknowledges the event, and the work being done to address it, including the name of a specific official. It also includes a modest critique and reference to a larger, well-known problem. Similar reporting covers a range of water public works issues, including maintenance of the city's canals, and the distribution of public taps. Such notices are often very short, and the importance of them can best be read in pattern.²¹

A much longer article appeared the following day.²² The anonymous author is clear that rainwater clearance efforts are laborious, and unevenly distributed:

I have not described the number of men who tire [from the work] or the amount of mud; or some of the police that [illegible] the water from the main streets. They continue to use pumps and have not run out of work for two days. But this has taken place only in my quarter of Azbakiya and Abdin. Some streets outside and in the rest of the city remain in mire that can only result in fever and death.²³

Like the reports, these articles are selective representations of the issue. But the representations are not identical and emphasize different things. As a group, the evidence emphasizes manual labor as central to rainwater clearance.

Another Approach to Structure/Infrastructure

Water management in Cairo required labor. That labor was largely manual, and without it, the machines of water infrastructure were quite useless. Studies on infrastructure had tended to prioritize the perspectives and prerogatives of technocrats

²⁰ *Al-Ahram* (November 14, 1898): 2.

²¹ I discuss the patterns of reporting on public tap problems in my dissertation. See: Schultz, "Living and Dying in Water."

²² This is significant. Usually Cairo's local news section, "al-Asima," includes many different small and large news items, and takes up anywhere from three columns to an entire page of the paper.

²³ *Al-Ahram* (November 15, 1898): 2. The author clearly criticizes the government and the British in this article as well.

and engineers.²⁴ This is not surprising considering they are the ones who wrote about public works infrastructure. They also had the authority to make change, or otherwise. However, this perspective marginalizes the people and bodies involved in construction and maintenance, as well as the vast majority of everyday users of public works infrastructure. Urban Cairenes today continue to struggle with drainage issues during the rare torrential rain.²⁵ Such challenges are perennial, and now as in the past, newspapers and other popular outlets serve to remind us that it is important to seek out the perspective from the street, rather than taking a bureaucrat's word for it. Taking the time to recover unfolded maps and scrutinize tables is, and presents, an alternative narrative, especially when the bureaucratic archive remains elusive.

Acknowledgements

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²⁴ Jennifer Derr and Ismail Shehab routinely also include the perspective of laborers and local Egyptian and Ottoman engineers rather than only the colonial perspective. Shehab Ismail, "Engineering Metropolis"; Jennifer Derr, "Labor-Time: Ecological Bodies and Agricultural Labor in 19th and Early 20th-Century Egypt," *International Journal of Middle East Studies* 50, no. 2 (2018): 195–212.

²⁵ For example: Rayhan Uddin, "'Complete Standstill': Heavy Rain Floods Cairo," *Middle East Eye*, October 23, 2019, <http://www.middleeasteye.net/news/cairo-hit-flooding>.

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