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Rails of the Royal Environment, Economy, and Engineering of the Mariut Railway

Dr Xiaoyue Li
Fellow, The Mohamed Ali Foundation

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Xiaoyue Li

Institute for Middle Eastern and Islamic Studies
Durham University
Al-Qasimi Building
Elvet Hill Road
Durham
DH1 3TU
Tel: +44 (0)191 3345680

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In 2018 Durham University and the Mohamed Ali Foundation launched a fellowship programme to encourage academic research in the archive of the last khedive of Egypt, Abbas Hilmi II (1874–1944), and to make the collection's strengths more widely known to international researchers.

The collection, which is deposited in Durham University Library's Archives and Special Collections, provides a rich resource of material on political, social, economic and cultural affairs in Egypt in the late 19th and first half of the 20th centuries. It is hoped that this endowment by the Mohamed Ali Foundation will foster deeper understanding of an important period of Egyptian history and of a transformative era in East-West relations.

Dr Xiaoyue Li is an Assistant Professor of History of the Middle East and North Africa at Tulane University, New Orleans, USA. His research focuses on the development of both the public and private railway sectors during Khedive Abbas Hilmi II's reign from 1892 and 1914. It explores the interplay of materiality, technology, capitalism, and politics that railways assembled. Taking an infrastructural approach, his study accentuates the multilayered politics in motion at the British Empire's frontier that oscillated between modernity and indigeneity, capitalization and decolonization, autocratic reality and democratic ethos. Specifically using the archives of Abbas Hilmi II, Dr Li further reveals the crucial roles of the Khedive and Egyptian bureaucrats in restructuring Egypt's railway system in a period overshadowed by British financial advisors and engineering administrators.

Email: yasinli@tulane.edu

Abstract

Between 1899 and 1913, Khedive Abbas Hilmi II and his administrative body, the Daira Khassa, developed the Mariut railway along Egypt's elongated northwestern coast. As an integral part of the Khedive's private estates, this infrastructure played a crucial role in supporting the Khedive's land reclamation in this region and stimulated a coastal economy. Its administrative independence from the Egyptian State Railways offered a subtle form of Khedival autonomy within the broader context of British colonial rule. Drawing upon detailed reports from Daira inspectors, my research explores the railway's multifaceted interactions with the coastal environment, its entanglement with engineering expertise, and opportunities and risks in its economic performance. The article further illuminates the quotidian challenges that plagued the Mariut railway—from water scarcity and monetary constraints to engineering staff shortage and land disputes. I argue that the railway's materiality, manifested in its varied operational deficiencies, inscribed a more nuanced power structure that revealed the Khedive's paradoxical relationship with an increasingly sophisticated colonial apparatus. This study moves beyond the conventional assessment of the Khedive's autonomy based on formal ownership and right to administration. Instead, I demonstrate that the Mariut railway's material dependencies epitomized and expected the Khedive's ultimate futile resistance against British colonialism in Egypt through the lens of infrastructural constraints.

Introduction

On May 11, 1913, the hall of power in Alexandria resonated with an unexpected royal outrage. Khedive Abbas Hilmi II, his face flushed with indignation, summoned his ministers for an unexpected interrogation that would display his unusual loss of composure.[1] What triggered the Khedive's ire? Days earlier, these very ministers had submitted a controversial proposal against the Khedive. They were united to oppose the Khedive's intended sale of the Mariut railway to an Italian bank, and instead advocated its acquisition by the Egyptian government. Behind this ministerial defiance stood Lord Kitchener, the British Consul General in Egypt, who had masterminded the ministers' proposal. Upon hearing about the Khedive's outrage, Kitchener reacted swiftly to forestall an unpredictable situation that harmed his interest. He sent a confidential letter to Sir Edward Grey, the British Secretary of State for Foreign Affairs, cautioning about a potential diplomatic crisis. He was concerned that the Khedive might soon travel to London and seek opportunities to sway Parliamentary opinion in his favor.[2] Kitchener's preemptive measures aimed to rally his compatriots against any persuasive attempts by the Khedive.

This confrontation, though confined to a royal meeting room, encapsulated the broader Anglo-Egyptian power dynamics at play over public infrastructure. While British sources dismissed the Khedive's reaction as merely impatient and unrestrained, the reality was far more nuanced. Contrary to the Orientalist portrayal of an incompetent and irrational ruler habitually appearing in British documents, the Khedive' unusual fury arose from reasoned grievances. Since the Khedive still held the absolute power to dismiss ministers at his will after the British occupation, the Egyptian ministers rarely confronted him directly, even in situations of different opinions. The unprecedented unanimity of his cabinet's opposition this time struck at the heart of the Khedival authority.[3] Moreover, the Mariut railway represented much more than merely a convenient means of transportation. The Khedive regarded it as a source of personal pride, as he took particular delight in operating the brass-trimmed locomotive in person to showcase his Mariut estate to distinguished guests.[4] The forced divestment not only deprived him of a treasured asset but also posed a threat

to his fiscal situation. Not long ago, he had negotiated a binding agreement with Banque di Roma to sell the railway.[5] The prospect of canceling this transaction not only endangered his credit with the bank, but also left him vulnerable to the Egyptian government's undervaluation of his asset.[6]

Intriguingly, despite his intense outrage before ministers in private, Abbas managed to maintain extraordinary composure in the presence of Kitchener, seemingly ready to acquiesce to all British impositions.[7] This dramatic contrast implied a deep emotional struggle, one that the Khedive carefully concealed in front of the British. More than a mere outburst of royal anger, this incident illuminates the intricate interplay of colonial power, technological ownership, and finance that foreshadowed the erosion of the Khedival authority. Such mounting tension ultimately culminated in the British decision to depose the Khedive as World War I erupted.

The Mariut railway, constructed and operated under the Khedival ownership from 1899 to 1913, represented a rare infrastructure enterprise in Egypt under British rule. In an era when British officials supervised virtually all major infrastructure, this railway maintained its institutional independence under the management of Daira Khassa, the Khedive's private administrative institution. Such autonomy contributed to the railway not only as a vital commercial asset, but also as a symbol for the last remaining Khedival sovereignty amid encroaching colonial administration. Yet, the Khedive's paradoxical decision to sell this strategic asset presented an intriguing historical puzzle. Even more revealing of the power dynamics was the dramatic nature of the sale itself, which provoked forceful intervention from British administrators. This study poses critical inquiries about the limits of Khedival autonomy and the mechanisms of colonial authority. I seek to understand how the colonial power exerted influence over an infrastructure outside its legal claim. Answers to this question reveal the underlying motivations that prompted the Khedive to surrender his possession in a situation where colonial pressure manifested in multiple ways.

My study questions ownership and right to administration as primary gauges to assess the Khedive's autonomy under British rule. These legal indicators of control—found in ownership documents and management titles—reveal only surface-level authority. They fail to capture a nuanced reality that defies simple labels or binary divisions. I argue that the Mariut railway, as a large-scale technical system, existed fundamentally as a relational reality.[8] It transformed from mere tracks and rolling stock into a dynamic socio-technical infrastructure through its material interactions with multiple forces, including the natural

"...THESE MATERIAL INSCRIPTIONS REMAIN VISIBLE AND ACTIVE SO LONG AS THE POWER STRUCTURE THAT BEARS THEM ENDURES..."

landscape, fiscal currents, technical expertise, standardization protocols, and most crucially, the decade-long tension between colonial and Khedival powers.[9] Focusing on the environmental, technical, and monetary aspects of the Mariut railway, my study transcends conventional binary frameworks of Khedival autonomy or colonial dominance. It unveils powers and structures embedded across networks where natural, technical, and social relations are inscribed into the railway's materiality to orchestrate its daily operations and long-term developmental trajectory.

An infrastructure's physical qualities are never arbitrary. While tangible and material, infrastructure also represents a cultural artifact that incorporates the wills of designers, engineers, managers, and users. Although not every agent's voice carries equal weight, their interactions and struggles structured contours of infrastructure's material presence, producing scripts and codes that legitimize and standardize infrastructure's daily operations—what external observers come to accept as routine and guideline. These material inscriptions remain visible and active so long as the power structure that bears them endures. The physical form of infrastructure both exhibits and enforces specific intentions, desires, aesthetics, and ideologies.[10]

The Mariut railway powerfully manifests these dual processes of inscription and exhibition. Its physical form bore the inscribed traces of multiple external forces such as the Khedive's ambition, colonial power dynamics, interests of local residents. These forces, etched into the railway's very materiality, remained stable until the conditions that produced them ceased to exist. This is not to contend that artifacts inherently preserved their own politics.[11] Rather, deconstructing infrastructure's materiality makes inscribed political forces legible, enabling a more nuanced analysis of how certain forces prevail while others are subdued. Ultimately, my study illustrates how Khedival autonomy and colonial domination existed not as mutually exclusive possibilities, but as simultaneously co-existing and contentious forces.

Building a Khedival Railway

On January 8, 1892, Abbas Hilmi II ascended to the throne as the Khedive of Egypt and the Sudan. He inherited not only his father Tawfiq Pasha's title but also the challenges of ruling under the British "veiled protectorate" (1882-1914).[12] In this era of informal colonialism, British officials sought to curtail the Khedive's authority, often reducing his role to that of a caged canary.[13] Yet, Abbas managed to retain several key private estates, which preserved his nobility and influence in this country. During Egypt's bankruptcy crisis in 1876, the government liquidated numeral royal properties to address the country's public debt and the Khedive's private liabilities. For the Egyptian ruler, the most significant loss was the Daira Saniyya, once the crown jewel of Khedival assets. This priced estate was sold to an international consortium to settle Khedive Ismail's substantial private debts, marking a critical erosion of Khedival wealth and power.[14] Abbas's inheritance, however, proved more enduring. Upon his accession, the Pasha retained full control of the Daira Khassa, which became a vital source of both income and influence for the new Khedive.[15] These substantial private assets afforded Abbas some degree of revenue independence and political leverage. The Daira Khassa, in particular, grew as both a lasting symbol of Khedival authority and a practical instrument against the Khedive's complete subordination to the British rule.

The Daira Khassa, as the Khedive's private fund, operated beyond the purview of both the Ministry of Finance (al-Diwan al-Maliyya) and the Public Debt Commission (Caisse de la Dette Publique), two pivotal institutions that upheld British monetary supervision. The Daira granted the Khedive and his men full control over its management and expenditures. This freedom allowed the Khedive to pursue a diverse range of investment strategies. While the majority of the Khedive's real estate concentrated on the Qubba district in Cairo and the Muntaza Palace in the Alexandrian neighborhood, Abbas's ambition stretched

further to Egypt's northwestern coast. There, he inherited nearly 3,000 feddans of agricultural land around Lake Mariut and 500 feddans in al-Hamam, both located west of Alexandria.[16] The Khedive regularly visited these properties and personally participated in agricultural experiments. His vision extended further still, as he planned to develop the entire northwestern coast, an elongated and sparsely populated region inhabited primarily by Bedouin tribes at the turn of the twentieth century. The 1907 census recorded a total of 35,706 population in the Mariut region. Of these residents, 27,901 were Bedouins, and 2,025 worked in various agricultural jobs.[17]

According to a contemporary Western traveler, Abbas disclosed his long-term project that "the country which extends to the west of Alexandria towards Tripoli is quite unknown to travellers. It is generally thought to be an immense desert, with a few oases, distant twenty or thirty days' camel march. Nevertheless, a huge number of caravans cross this desert, either from these oases or from Tripoli, bringing all manner of goods to the Alexandria markets."[18] To develop the northwestern coast, the Khedive's most ambitious venture was a new railway that completely belonged to him. This line was intended to connect Alexandria with Tripoli, then under Ottoman rule until Italy's conquest in 1911. Egypt's northwestern coast, located outside the rigorous British supervision of the Nile Delta, offered the Khedive an exceptional space for autonomous development. Moreover, this railway project secured enthusiastic support from both Italian and Ottoman authorities, who recognized its strategic and economic potential.[19] The Mariut railway then became the infrastructural foundation of Khedive's developmental and diplomatic agendas. Throughout the 1900s, the Daira Khassa extensively planned to transform the northwestern coast through a series of investments: local markets emerged in al-ʿAmiriyya, a vineyard flourished in Ikingi Mariut, quarries operated in Sidi Abd Rahman, and farms and cattle ranches appeared in al-Dabʿa and Garawla.[20] The railway line threaded these varied enterprises together, creating an interconnected network of Khedival properties that stretched along the scenic coast.

On July 4, 1899, W. E. Garstin, Egypt's undersecretary of state for public works, authorized the Daira Khassa's request to construct a railway line near Lake Mariut to serve the Khedival properties in the region. Under this agreement, the Daira Khassa assumed full responsibility for the cost of railway construction and operation.[21] The project began with a standard-gauge line starting at the al-Wardian terminal station, located in the heart of Alexandria. From there, the line traversed through major Khedival estates around Lake Mariut and continued to

al-Hamam. As the Khedive intended to reclaim more land on the northwestern coast, the railway line grew in tandem, extending first to al-Dabʿa in 1904 and ultimately reaching its westernmost point at Fuka by 1908. This marked the final extension of the Mariut railway under the Khedival administration. Close to its starting point at al-Wardian, the Mariut line connected directly to the Egyptian State Railway's (henceforth ESR) Qabbari station. For the first hundred miles from al-Wardian to al-Dabʿa, the line maintained the same standard gauge as the government railway. Only in its final 45-mile extension from al-Dabʿa to Fuka did it switch to narrow gauge.[22] This technical choice distinguished the Mariut railway from other private enterprises in Egypt, which typically operated entirely on narrow-gauge tracks to differentiate themselves from the existing state network.[23] The decision to maintain a standard gauge for most of the line and establish a direct connection to the ESR was more than an engineering preference. It created both technological accessibility and dependency, a double-edged sword whose significance would later prove crucial to the railway's fate.

Figure 1 Blueprint Map of the Mariut Railway drawn by Gustav Kaiser, HIL 172/15, May 25, 1906

Historiography and Documents

Existing scholarship has examined the Mariut railway in two major aspects. First, diplomatic historians such as George Cassar and Ann Elizabeth Mayer have scrutinized the contentious forced sale of the Mariut railway to the Egyptian government.[24] Their research, drawing extensively from the British Public Record Office, sheds light on how the Mariut railway's strategic proximity to the Libyan border, as well as the sensitive timing of the Khedive's proposal sale, ultimately led to Lord Kitchener's heavy-handed intervention that turned it into a diplomatic crisis. They argue that Kitchener's vehement

opposition arose after he found out that the Khedive had negotiated with the Italians without first obtaining his permission. Kitchener viewed the Khedival defiance with particular concerns, given Italy's territorial expansion along Egypt's western frontier and its emerging role as a potential adversary in the pre-World War I period.[25] However, British sources alone provide limited insight into the Khedive's motivations for this sale. While British officials speculated that the decision stemmed from either the Khedive's extravagant spending habits or possible anti-British conspiracies, the absence of Egyptian perspectives in these sources leaves crucial questions unanswered about the Khedive's true intentions.

Matthew Ellis presents a revisionist history of Egypt's northwestern coast by drawing upon newly discovered Arabic sources alongside English documents.[26] His work, which anticipates Aaron Jakes' later critique of colonial economism, challenges the notion of a singular path to economic modernization.[27] Ellis demonstrates how the Mariut railway and the Khedive's development projects associated with the infrastructure represented an alternative vision of modernity—one in which the Khedive strategically combined economic development with political legitimacy. Through continuous land reclamation initiatives and railway construction, the Khedive established "enclaves of legal exceptionalism within the emergent modern nation-state of Egypt."[28] However, Ellis's overly optimistic assessment of the railway project as a source of the Khedive's political legitimacy, while illuminating in many aspects, invites further consideration. Among many, the Khedive's final decision to divest the railway further complicates Ellis's argument, suggesting nuanced factors that might have influenced this choice.[29] Though the precise reasoning behind this divestment remains obscure in historical records, this very act raises intriguing questions about the railway's dual role as an economic asset and an instrument of political leverage.

The Daira Khassa files preserved at the Palace Green Library, Durham University offer invaluable insights into the Khedive's private estates from within, shedding fresh light on his business ventures and daily administrative practices. In particular, documents on the Mariut railway illuminate hitherto unknown aspects of this infrastructure project's inner workings.[30] Since 1900, the Daira Khassa began to implement a systematic inspection regime. It dispatched inspectors (*taftīsh*) on a weekly basis to monitor railway operations.[31] Initially, these inspections were conducted by part-time Daira Khassa officials who also oversaw the Khedival estates near Lake Mariut.[32] As the railway line expanded, specialized inspectors from the newly established Mariut Railway Department (Maslaha Sikka Hadid Mariut) were sent, typically by individuals with basic engineering training.[33] Operating within a structured hierarchical

system, these officials submitted detailed reports directly to the director of the Daira Khassa. These meticulously preserved documents allow historians to examine everyday details of the railway, from monetary administration and personnel decisions to technical challenges and land disputes. These details illuminate broader historiographical themes, including the materiality of infrastructure, the role of technical expertise, capital management, and other dimensions of the Khedival administration.

Among their multiple responsibilities, the Daira inspectors oversaw discipline and regulatory compliance among railway employees in the Daira Khassa, notably including a few settled Bedouins from the region. These inspectors kept elaborate logs of workforce discipline, in which they documented every instance of misconduct and regulatory violation. Such prudent record-keeping reflected the administration's growing attention to professional standardization. For example, on June 18, 1910, one report detailed the case of Muhammad Khater Jawish, a guard at al-Dab'a station, who was found to have misused his position by frequenting local cafés during working hours, engaging in backgammon games with foreign patrons, and evading payment for his entertainment.[34] The report further noted that such behavior not only violated workplace regulations, but also potentially compromised the station's security during his unauthorized absences. While these disciplinary matters typically occupied a mediocre portion of the entire inspection reports, they represented a rudimentary implementation of systematic workplace supervision, a significant improvement in the Mariut railway administration. This supervisory mechanism aimed to ensure that rank-and-file employees adhere to standardized regulations and maintain professional conduct, marking a shift toward modern management practices in the Khedive's expanding infrastructure.

By means of their regulatory power, the Daira inspectors functioned as key arbitrators within the communities along the railway corridor. The economic potential spurred the growth of vibrant weekend markets in railway towns such as al-Hamam and al-'Amiriyya, where Bedouins gathered to sell livestock and did business with merchants from outside the region. These markets served as crucial centers of economic exchanges that gradually transformed modest settlements into dynamic commercial hubs. There were also moments of unavoidable conflicts. On these occasions, the Daira inspectors played a key role in mediating disputes and maintaining market order. In July 1910, for instance, when news spread about a market supervisor coercing Bedouin sellers into unwanted transactions, the inspector promptly intervened and reported this misconduct to the Daira Khassa director.[35] The inspector's mandate further included monitoring market sustainability. When trade activity declined, they

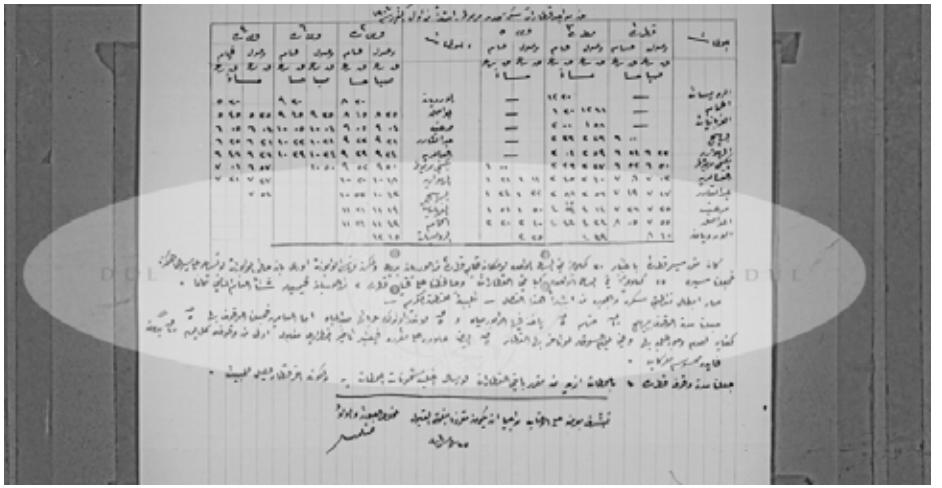

Figure 2 Timetable of the Mariut Railway, 5 August 1904, HIL 169/465

conducted thorough investigations into the causes of merchant departure and proposed remedial measures to revitalize commercial activity.[36] These cases of interventions demonstrate how the Daira Khassa, through its comprehensive inspection system, extended far beyond basic administrative roles to assume crucial responsibility in maintaining social order and stimulating economic growth in these emerging market towns.

Natural Geography and Economic Returns

Beyond their regulatory roles, the Daira inspectors held decisive responsibilities for monetary oversight. These monetary responsibilities included collecting station revenues and compiling comprehensive data analyses for the Daira director. In their weekly revenue analyses, inspectors compared incomes across monthly and annual periods, accompanied by detailed explanations of revenue fluctuations and market conditions. The earliest existing report, covering the week from June 25 to July 1, 1900, documented a total revenue of 12.810 L.E. only, reflecting the railway's nascency.[37] The railway's fiscal performance showed exponential growth during its initial six years of operation, coinciding with the completion of the al-Wardian to al-Hamam section of the line.[38] In contrast, revenues between 1906 and 1913 remained relatively stable, characterized by steady commercial traffic and constant passenger volumes. This steady pattern was interrupted only by an unexpected surge in 1912 when the railway acted

as a crucial transportation for Ottoman refugees fleeing the Italian conquest of Tripoli. By 1913, the final year of available records, annual revenue reached an impressive 11,562.814 L.E., representing approximately 5.5 percent of the Daira Khassa's total income.[39] The continued revenue growth showed the railway had transformed from a technological experiment into a significant element that contributed to the Khedive's economic portfolio.

Despite steady growth, a careful study of railway receipts reveals a striking geographic disparity in earnings across stations, challenging assumptions about uniform profitability along the Mariut line. Not all sections generated equal returns—indeed, some stations incurred operational costs that exceeded their earnings. As specified in Table 1, the eastern section of the line, stretching from al-Wardian to al-Hamam, proved remarkably lucrative, generating over 80 percent of the total revenue while comprising less than 20 percent of the railway's total length. This salient concentration of revenue in the eastern section reflected the distinct demographic and economic pattern of Egypt's

Station Names (from East to West)	1909 (in L.E.)	1910 (in L.E.)
Al-Wardian	31.125	40.695
Al-Muwasala (Mex junction)	5.785	7.725
Abd al-Qadir	2.255	2.040
Al-ʿAmiriyya	21.405	22.780
Ikingi Mariut	3.670	2.780
Al-Hawariyya	4.065	3.795
Bahig	17.035	12.920
Al-Gharbaniyyat	5.695	3.400
Al-Hamam	22.435	35.840
Al-Rusiyyat	1.050	1.300
Al-ʿUmayd	7.070	4.120
Alamein	1.190	1.705
Abd al-Rahman	2.745	3.180
Ghazal	0.475	2.060
Dabʿa	7.465	6.760
Ghalal	2.360	2.125
Fuka	5.805	5.030
Total	141.190	151.470

Table 1 Revenues of Each Mariut Railway Station August 7-13, 1910, with Comparison of 1909, translated by the author. In HIL 171/133.

northwestern coast. Stations near Alexandria benefited from their geographical proximity to the bustling Mediterranean port city, which had the highest population density and commercial activity in the region.

The eastern section also benefited from its proximity to both the water-abundant Nile Delta and the expansive Lake Mariut. It enjoyed much higher humidity levels and more reliable access to fresh water sources. This favorable condition fostered significant agricultural yields dating back to antiquity.[40] The region's most well-known agricultural commodity, Mariut barley, was predominantly cultivated near Lake Mariut in the Khedive's estates. It typically fetched a high price for use in brewing and was mostly exported to Britain.[41] Therefore, the eastern section of the Mariut railway operated as its economic foundation.

On the contrary, the western extension beyond al-Hamam station failed to prove its fiscal sustainability. This revenue struggle was unsurprising, considering that this section traversed a vast landscape that was sparsely inhabited by nomadic tribes and was characterized by limited economic activity. No village or town virtually existed beyond Alamein.[42] Notably, this period predated the emergence of mass tourism along Egypt's northwestern coast, which would later completely transform the area's socio-economic landscape. While the Khedive's newly acquired properties periodically attracted seasonal workers, the mere presence of a single-track railway was insufficient to fundamentally restructure the region's demographic patterns during its formative period. Consequently, the railway's operational records revealed a salient disparity between a profitable eastern section and a resource-intensive western extension. This geographical disparity reflected the challenges of maintaining sustainable transportation across expansive yet sparsely populated coastal territories.

The underperforming revenue of the western section was compounded by high costs in maintenance and manpower, with water management emerging as the most pressing engineering challenge. Fresh water was fundamental to steam locomotives, particularly for generating the steam that powered pistons and drove wheels. Yet, Egypt's northwestern coast was characterized by scarcity of water. This narrow corridor, extending merely 10 to 12 miles from sea to desert, included a varied terrain of dunes, rocky ridges, salt marshes, cultivated land, and railway tracks.[43] These environmental conditions typified North Africa's elongated habitable belt. Temperature peaked during summer months, reaching between 20 and 35 degrees Celsius. Rainfall was concentrated during the winter months from October through February or March, with the highest precipitation occurring in December and January yielding modest

annual totals between 5 and 30 centimeters.[44] The climate pattern also varied across the coastal strip. The western area received much less precipitation and experienced more intensive heat than the eastern area.

The Mariut railway's operational schedule, running annually from April to September, coincided with the period of most severe water scarcity and heat along its western section. This timing created significant technical challenges, as maintaining stable water supplies proved especially difficult during these critical months. The chronic water shortage manifested in frequent overheating incidents during train operations, and resulted in cumulative and often permanent damage to locomotive equipment. The inspectors' reports constantly indicated that the narrow-gauge western section was particularly vulnerable to these water-related challenges.[45] To sustain critical operations, the railway administration implemented a basic water management system. A water storage facility was constructed near al-Hamam station—the westmost station along Lake Mariut—to serve as a strategic depot for water distribution.[46] Then, every locomotive passing al-Hamam was attached to one or two water tanks—these vessels traveled empty on eastbound journeys, filled with water in al-Hamam, and returned fully laden to replenish the western stations' depleted reservoirs.[47] While this simple design ensured operational continuity, it came with substantial costs. Water supply expenses, including transpiration costs, storage facility maintenance, and equipment repairs, imposed an additional fiscal burden that limited the narrow-gauge section's ability to grow. In years of economic downturns, revenue declined quickly enough to eat into its already thin profit margins.[48] By comparison, this expenditure on water supply was almost negligible in the eastern section and throughout most parts of the government railway.

The Mariut railway's fiscal performance lagged substantially behind other contemporary rail systems. Its annual net profits remained modest, ranging between 10 to 12 percent.[49] These returns paled compared to the ESR's achievement, which generated far more impressive rates of 45 to 55 percent during the same period.[50] Contemporary observers criticized the Mariut line for its "clumsy economy," pointing out its high operational costs resulted from redundant security personnel, frequent accidents, and poor management.[51] Beyond the geographic and demographic patterns discussed earlier in this article, the line's poor fiscal performance was due to its intrinsic limitation in scale. The railway was never developed into an interconnected network but remained a simple linear route with a terminal dead end. This basic configuration severely constrained its commercial potential. Passenger and freight volumes diminished progressively toward the western terminal, leading to mounting inefficiencies in resource utilization. The contrast between the Mariut

"...SUCH A CONNECTION PROMISED TO ESTABLISH A VITAL MEDITERRANEAN ARTERY THAT WOULD FACILITATE THE MOVEMENT OF PEOPLE AND GOODS..."

linear line and the ESR network demonstrated the significance of scale in infrastructure profitability. While the ESR developed multiple interconnected routes and service points, the Mariut railway's limited scale precluded such economies of scale.[52] This structural constraint effectively capped the line's growth and undermined its long-term fiscal viability. The absence of network effects, which typically allowed railway systems to achieve economies of scale, became a critical factor that persistently hindered the Mariut line's performance.

The Mariut line, far from being conceived as a mere terminal route, embodied one of the Khedive's ambitious infrastructure projects. Despite his limited political capacity, the Khedive envisioned a scheme that extended well past the Egyptian border. This grandiose plan included a westward expansion that would reach as far as Sallum, where it would be integrated with the existing transportation network in the Ottoman province of Tripolitania.[53] Such a connection promised to establish a vital Mediterranean artery that would facilitate the movement of people and goods between the two territories. However, the project's fate was inextricably bound to the changing geopolitical currents of the era. The Khedive's constrained power and limited resources persistently undermined his capacity to implement such an ambitious project.

The Khedival dream of a trans-Mediterranean railway began to crumble decisively following Italy's conquest of Ottoman Tripoli in 1911. In the tumultuous years preceding World War I, British anxieties about growing Italian influence in Tripoli intensified, casting a shadow over the railway's prospects. Of particular concern was Lord Kitchener's fear that portions of Egypt's railway communications might fall under the influence of a rival foreign power, potentially impairing British strategic interests in the region.[54] These mounting political pressures gradually relegated the Khedive expansionist plan to unfulfilled dreams. Geopolitical tensions did not always forestall construction; in some cases, they accelerated it. Such a scenario happened 25 years later when Fascist Italy occupied Ethiopia, directly threatening Anglo-Egyptian Sudan. To prepare for potential military conflict with Fascist Italy, the Egyptian government, under British orders, extended the Mariut line from its terminus at Fuka to Mersa Matruh in order to establish a defensive force at Matruh.[55] The Mariut railway thus marked how grand infrastructure vision in the colonial era often succumbed to forces of geographical constraints and imperial interests.

Expertise, Land, Colonial Governance

Besides revealing geographical disparities in railway revenue, the inspector reports to the Daira Khassa exposed critical operational vulnerabilities of the Mariut railway. These reported detailed technical concerns, questioned operational feasibility, and scrutinized required interactions with the colonial government. Among their numerous findings, inspectors repeatedly disclosed the Mariut line's inevitable reliance on the ESR, particularly in terms of technical expertise and land acquisition.

From its inception, the Mariut line depended heavily on the ESR' existing technical foundation. The railway commenced operations by acquiring seven locomotives from the ESR at discounted rates. This procurement pattern further extended to passenger carriages, freight cars, and other essential equipment. The government's support reached even further to provide the Daira Khassa with prison labor for railway construction.[56] Indeed, without such enormous government support, the Khedive's ability to build the Mariut line would have been severely hampered. This framework of receiving technical assistance from the ESR, while convenient and economically beneficial in the short term, bore significant long-term costs. The ESR's selling of the equipment was not entirely altruistic. At the beginning of the 20th century, the ESR gradually found relief from previous financial pressures and started to liquidate its rolling stock inventory for technical upgrades. At this moment, it was in dire need of selling outdated equipment, with the Khedive emerging as one of its principal buyers.[57] Consequently, most equipment was already

old-fashioned at the time of the Khedive's purchase. The rolling stock from the ESR, totaling 14 locomotives, 48 carriages, and 171 freight cars, had been in service for over three decades, and some even exceeded fifty years of use.[58] In turn, the antiquated equipment failed frequently, leaving inspectors to chronicle an endless series of technical breakdowns and creating a persistent need for external technical support.

The Mariut railway's technical dependence was a direct consequence of its imbalanced staff composition. While the administration maintained abundant personnel for daily operations and security, its technical team remained critically understaffed. A mere four specialists made up the entire technical workforce: an Egyptian chief engineer, Ahmad Effendi Wasfi, one German engineer, Gustav Kaiser, and two Egyptian assistants.[59] This small team of four held full accountability for all the railway's technical duties, including earthwork, soil assessment, slope calculations, track laying, and station construction. This staff shortage reached a critical point after 1908 when the construction phase reached its conclusion. The conspicuous absence of Kaiser's engineering reports from the archives after this year strongly suggested his departure from Egypt.[60] The railway struggled to cope with the aftermath of Kaiser's absence, as the ongoing technical maintenance and repairs required a level of expertise that the remaining staff had yet fully mastered. With time passing by, the aging equipment's growing demands for frequent and complex maintenance further exposed the striking deficiency of the railway's technical staff.

With barely a handful of engineers available, the Mariut railway inevitably surrendered its independence to the ESR for even the most basic mechanical tasks. The ESR's al-Qabbari workshop, located close to Mariut's al-Wardian station, became the railway's technical lifeline. This dependency expressed itself most tellingly in a seemingly inconspicuous incident at one of the Khedive stations on July 9, 1910. When a Khedival inspector detected smoke emanating from a locomotive engine that summer day, he was unable to execute even basic diagnostics without expert consultation. With no alternative, he called a specialist from al-Qabbari, who promptly identified what should have been an elementary oversight—a crankshaft burned out from insufficient cooling water. Yet even then, neither man was able to repair the damaged component on-site. Instead, they dispatch the problem to the repair team at al-Qabbari workshop.[61] Such routine mechanical failures, and more pointedly, the inspector's inability to address them, captured a fundamental vulnerability of the Mariut railway administration. It failed to maintain foundational-level technical self-sufficiency. What had begun as occasional mechanical assistance gradually evolved into a structural and institutional dependency, rendering the Khedive's claim of an independent Mariut railway hollow in practice.

The technical compatibility between the Mariut line and the ESR created more intricate dependency. Their shared gauge and connected terminals, while efficient in operation, opened an unguarded door for the more sophisticated government railway to penetrate the Khedive's domain steadily. In 1906, the two railway companies formalized an agreement allowing ESR trains to run on Mariut tracks. Accordingly, two ESR express services ran daily between Alexandria and al-ʻUmayd, connecting to the existing Mariut line at the Mex junction.[62] This arrangement, seemingly innocuous, struck at the heart of the Khedival railway's most profitable route. For passengers and freight bound for the Nile Delta, the ESR's express trains offered superior services with modern equipment and more time accuracy. The same standard did not necessarily guarantee convenience, but different gauges unavoidably produced barriers. When the ESR officially annexed the Mariut railway in January 1914, the first modification was to dismantle the latter's narrow-gauge section completely and reconstruct it with standard-gauge tracks.[63] This seven-month project yielded little progress, with the standard-gauge tracks only advancing seven kilometers further at Dabʻa. Thus, the narrow-gauge railway past this point was abandoned entirely.[64] Subsequently, the unified standard-gauge system from Alexandria to Dabʻa eliminated technical incompatibilities and facilitated the complete integration of the Mariut line into the existing ESR network.

The colonial government's encroachment extended more than mere daily operations and reached into the realm of security. In October 1913, British police officers established a permanent presence at the Bahij station, close to a popular destination for British soldiers to go on hunting expeditions. Their purported claim was to maintain public order in this area.[65] Recreational hunting of British soldiers had sowed seeds of colonial clashes, as fully exhibited in the Dinshawai incident. Yet, unlike the Dinshawai peasants, the aristocratic Daira Khassa accommodated the British request. Thus began the Khedive's quiet surrender of authority over his railway enterprise, a process set in motion well before any formal intention to sell. With periodic deployment of British forces along the Mariut railway, the Khedive and his Daira realized that they no longer wielded the same leverage as before to counter the gradual erosion of their autonomy.

The growing Italian influence in Tripoli catalyzed a profound shift in the colonial government's stance toward the Khedival railway, most notably in its land acquisition policies. For more than a decade, the Khedive had enjoyed remarkably favorable terms for land reclamation in the northwestern coast, which remained at the symbolic rate of 1 piaster per feddan.[66] This preferential custom, which laid the foundation for the Mariut railway's rapid expansion, ended abruptly in July 1911. At this point, the Daira Khassa sought to expand

"THE TIMING OF THIS LAND DISPUTE COINCIDED WITH MOUNTING COLONIAL CONCERNS ABOUT POTENTIAL ITALIAN INTERESTS..."

its vital al-Wardian terminal station and requested more land from the government. The Minister of Finance's response insisted on a dramatic price adjustment. The discounted rate had gone, and land had skyrocketed to between 10 and 30 piasters per feddan. The Daira's attempts to negotiate for a compromise term of 2 piaster per feddan met with strong objections, suggesting a determinate shift in the government's attitude.[67] For the Khedive, the economic implications were immediate and severe. The planned station expansion alone incurred an additional cost of 1,615 L.E.[68] Furthermore, this sharp and unexpected rise in land prices accomplished what appeared to be the government's underlying objective. It dealt a crushing blow to the Khedive's expansionist aspirations for the future Mariut railway.

The timing of this land dispute coincided with mounting colonial concerns about potential Italian interests in the region's transportation. The government's leverage became more salient during subsequent negotiations when the Khedive attempted to sell the railway to an Italian bank. In a masterful display of administrative authority, Lord Kitchener asserted that the Khedive's rights only included access to land, not ownership, because the ultimate title belonged to the Egyptian government.[69] This regrettable

land dispute exposed not only bureaucratic tensions, but also the fundamental precarity of the Khedival railway. Through its iron grip on land, the colonial government mastered the railway's destiny, a bitter reality that unveiled itself to the Khedive with quiet, relentless clarity.

These various vulnerabilities—from technical dependence and chronic engineering deficit to limited scale of operation and land disputes—highlight how the Mariut railway's initial cost-saving strategies eventually subverted its long-term viability. What had begun as the Khedive's audacious bid for independence in the northwestern region turned out to curtail his own autonomy vis-à-vis the colonial power. In this cautionary tale, technical dependency and territorial ambiguity silently transformed into institutional shackles, which ultimately undermined the very autonomy they had once promised to secure.

Conclusion: Inscribed Colonialism

In the memoirs of Ahmad Shafiq Pasha, chief of staff to the Daira Khassa, a telling observation captured the nature of the Mariut railway. Shafiq Pasha recalled that Brewster Bey dismissed the railway as nothing more than a *la'ūba* (toy), a deliberate British ploy to distract the Khedive and dilute his power of opposition.[70] This metaphor takes on deeper poignancy through Shafiq Pasha's bitter recollection of the railway's forced sale, a transaction he oversaw firsthand. Indeed, like a plaything in colonial hands, the Mariut railway could be granted when it served imperial interests and just as swiftly withdrawn when circumstances demanded. This cynical game of giving and taking epitomized the manipulative character of colonial governance.

For fifteen years, the Khedive held the reins—or so it seemed—while his Daira Khassa maintained the economic pulse of this desert enterprise. Along the iron rails, his loyal inspectors documented every detail, filling ledgers with reports of monetary matters, engineering challenges, and the daily rhythm of railway life. These papers preserved a railway world apart from colonial Egypt, a northwestern domain where Khedival authority still held sway. If these records speak the truth, no British officials cast their shadow over this sovereign enterprise, as if this stretch of track existed in a world of its own. The archives whisper of an unusual Khedival autonomy, where this corner of Egypt seemingly escaped British eyes in an era when colonial power perpetuated every facet of Egyptian life.

Colonial power took shape far beyond the incarnated form of flesh-and-blood officials who voiced commands and penned orders. Its deeper influence lay inscribed in the materiality of the railway—its rails, water tanks, steam engines, land titles, and station walls—and buried in every line of the inspectors' reports. As Jennifer Derr's argument about the "material rootedness" of colonial expertise, these physical elements spoke no politics, yet each carried colonial power's lasting inscription that persisted through time.[71] The Mariut railway, though conceived with the Khedive's longing for autonomy, bore these silent inscriptions. Here, colonialism stripped away its human disguise to transform into something more insidious and pervasive, a force embedded within the very fabric of technological infrastructure. In practice, the colonial grip was ubiquitous. Railway structures operated within boundaries drawn by colonial permission; technical solutions depended largely on colonial workshops; and even the land beneath the rails was sanctioned through favorable terms offered by the colonial bureaucracy. When the Khedive sought to escape into territories outside the colonial purview, the infrastructure held him captive, where every mile of track inscribed imperial power's constant presence.

Could Khedive Abbas have charted a different path had he refused to sell the railway and insisted on his own development plans? In this scenario, the Khedive would have retained a geographically limited railway without access to Tripoli that burdened by unprofitable stations. Moreover, his railway operations would have been denied access to colonial technical resources and have remained vulnerable to the looming threat of wartime seizure. These hypothetical scenarios illuminate not alternative possibilities, but rather the profound ways colonial power became embedded in the railway's material reality. Any alternative path chosen by the Khedive would likely have led to similar outcomes, a pattern that transcends mere coincidence. This inevitability reveals how colonial influence operated through the railway's very material existence that extended far beyond direct administrative interventions. The inscribed colonialism manifested precisely in this capacity to shape possibilities through infrastructural constraints, a subtle force that endured regardless of ownership or control.

End notes

1 The National Archives (henceforth TNA), Foreign Office (henceforth FO) 800/48/37, Kitchener to Edward Grey, May 11, 1913.
2 Ibid.
3 FO 800/48/41, Edward Cecil to Kitchener, July 1913.
4 A. B. De Guerville, *New Egypt* (London: William Heinemann, 1906), 130.
5 TNA, Public Record Office (henceforth PRO) 30/57/46, March 1, 1914, the Khedive has a debit of L.E. 29,000 at Banco di Roma.
6 The Egyptian government exercised legal pressure against Banco di Roma, compelling the Italian bank to withdraw from the transaction. Simultaneously, Kitchener issued an unequivocal declaration that effectively barred any potential buyers, whether private groups or financial syndicates, from acquiring the railway. See FO 141/635/3 Kitchener to Edward Grey, March 27, 1913.
7 During his meeting with Lord Kitchener regarding the Mariut railway issue, Abbas Hilmi II adopted a conciliatory tone: "I quite understand, Kitchener Pasha, it [selling the Mariut railway to Italian bank] is very unpleasant for you, for this is the few occasion you've found yourself in such a position, but I assume you quite need it [selling the railway to the Egyptian government] and it doesn't upset me at all." See Sudan Archive, Durham University (henceforth SAD) 186/1, letter from Jimmy Watson, April 7, 1913.
8 Susan Leigh Star argues that "infrastructure is a fundamentally relational concept, becoming real infrastructure in relation to organized practices." See "The Ethnography of Infrastructure," *American Behavioral Scientist* 43, no. 3 (1999): 380.
9 Here, I am influenced by actor-network theory (ANT). This scholarship does not view non-human actors as passive, functional equipment in a large-scale technical system, but as active participants in the network of interactions involving both human and non-human agencies. See John Law, "Notes on the Theory of the Actor-Network: Ordering, Strategy and Heterogeneity," System Practice 5 (1992): 379-93; Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network Theory* (Oxford, UK: Oxford University Press, 2007); Annemarie Mol, "Actor-Network Theory: Sensitive Terms and Enduring Tensions," *Kölner Zeitschrift für Soziologie und Sozialpsychologie* 50, no. 1 (2010): 253-69.
10 For the review of the aesthetic dimension of infrastructure, see Brian Larkin, "The Politics and Poetics of Infrastructure," *Annual Review of Anthropology* 42 (2013): 327-343.
11 The scholarly debates over artifact politics can be traced back to Langdon Winner, "Do Artifacts Have Politics?" Daedalus 109, no. 1 (1980): 121-36. Exemplary scholarship on material politics in the Middle East can be found in but not limited to Timothy Mitchell, *Carbon Democracy: Political Power in the Age of Oil* (London: Verso, 2013); On Barak, *Powering Empire: How Coal Made the Middle East and Sparked Global Carbonization* (Oakland, CA: University of California Press, 2020).
12 The use of "veiled protectorate" can be found in historical writings such as Sir Alfred Milner, *England in Egypt: With Additions Summarizing the Course of Events to the Close of the Year* (Piscataway, NJ: Gorgias Press, 2002), 24-35. For the British occupation of Egypt, see Afaf Lutfi al-Sayyid-Marsot, "The British Occupation of Egypt from 1882," in Andrew Porter and Wm Roger Louis, eds., *The Oxford History of the British Empire: Volume III: The Nineteenth Century* (Oxford, UK: Oxford University Press, 1991), 651-664.
13 Donald McKale, "Influence without Power: The last Khedive of Egypt and the Great Powers, 1914-1918," *Middle Eastern Studies* 33, no. 1 (1997): 20-39.
14 Ali Coşkun Tunçer, *Sovereign Debt and International Financial Control: The Middle East and the Balkans, 1870–1914* (New York: Palgrave Macmillan, 2015), 39-40. The specificities of Daira loans can be found in Abdel-Maksud Hamza, *The Public Debt of Egypt, 1854-1876* (Cairo: Government Press, 1944), 256-257.
15 The existing study on the Daira Khassa is very limited. However, the Abbas Hilmi II papers (henceforth HIL) at Durham University Library keep comprehensive records of this Khedival institution under the reign of Abbas Hilmi II, see HIL 161-165.
16 HIL 162/220, assets of the Daira Khassa, 1907.
17 C.C. Lowis, *The Census of Egypt, 1907* (Cairo: National Printing Department, 1909), 174-83.
18 Guerville, *New Egypt*, 112-13.
19 Guerville, *New Egypt*, 131.
20 Matthew Ellis, *Desert Borderland: The Making of Modern Egypt and Libya* (Stanford, CA: Stanford University Press, 2018), 103.
21 FO 371/1636, Garstin to Daira Khassa, July 4, 1889.
22 Ellis, *Desert Borderland*, 105.
23 Private railway companies emerge rapidly since the 1890s, often funded by European capital consortia. For details of these private railway companies,

see Lionel Wiener, *L'Égypte et ses chemins de fer* (Brussels: 1932), 421-592.

24 Anna Elizabeth Mayer, "Abbas Hilmi II: The Khedive and Egypt's Struggle for Independence" (PhD diss., University of Michigan, 1978), 261-84; George Cassar, *Kitchener as Proconsul of Egypt, 1914-1919* (New York: Palgrave Macmillan, 2016), 187-203.

25 Mayer, *Abbas Hilmi II*, 266-67; Cassar, *Kitchener*, 187-88.

26 Ellis, *Desert Borderland*, 87-115.

27 Aaron Jakes, *Egypt's Occupation: Colonial Economism and the Crises of Capitalism* (Stanford, CA: Stanford University Press, 2020).

28 Ellis, *Desert Borderland*, 38.

29 The Khedive ultimately stipulated that the transfer value of his railway ownership would be based solely on its construction costs, which were assessed between 390,000 and 394,000 L.E. See HIL 465/5/2, "La Vente du Chemin de Fer du Mariout," 1914.

30 Files directly related to the Mariut railways are located in HIL 169-173.

31 The earliest extant inspection report is preserved HIL 169/25, June 25-July 1, 1900.

32 For example, HIL 169/419-420, July 14, 1904, in which it shows that the Mariut Railway Department was juxtaposed with other departments of the Daira Khassa such as markets, al-ʿAmiriyya, Ikingi Mariut, al-Hamam, and police.

33 For example, HIL 170/27, June 17, 1906.

34 HIL 171/55, report on the works of the narrow-gauge railway administration, June 12-18, 1910.

35 HIL 171/78, report on the works of the Mariut railway, July 4-12, 1910.

36 Ibid.

37 HIL 169/25, announcement about the works under the Daira Khassa regarding the Mariut railway, June 25-July 1, 1900.

38 The railway revenue between January 1 and August 28 totaled 9,728.395 L.E. See HIL 169/680, report on the Mariut railway administration, August 30, 1905.

39 The last revenue of the Mariut railway in 1913 can be retrieved from HIL 171/432, report on the works of the Mariut railway, July 1913. Daira Khassa's total revenue in 1913 was 209,637 L.E. See HIL 163/430, detailed memorandum about the budget and its interests, 1913.

40 "Tarikh Mariut al-Qadim," *Egyptian State Railways Magazine* 4, no. 8 (August 1935): 13-14.

41 H. W. Mardon, *A Geography of Egypt and the Anglo-Egyptian Sudan* (Glasgow: Blackie & Son, 1906), 102.

42 "History of Mersa Matrouh Railway, Egypt," *Egyptian State Railways Magazine* 8, vol. 11&12 (November-December 1939): 4.

43 A. H. Montasir, "Soil Structure in Relation to Plants at Mariut," *Bulletin de l'Institut d'Egypte* 25 (1942): 206-7.

44 Ibid., 208.

45 HIL 171/170, report on the works of the Mariut railway, September 21-27, 1910.

46 HIL 171/5, report on the works of the Mariut railway, June 6-12, 1910.

47 The usage and maintenance of water tanks can be frequently found in files other than previously cited, for example, HIL 169/418-19, weekly report on Mariut, July 7, 1904; HIL 171/65, works of steamers, July 11, 1910; HIL 171/104, report on the works of the Mariut railway, July 27-August 1, 1910; HIL 171/410, announcement of July 1912.

48 1911 was one of the years when the narrow-gauge section had a major recession, but the standard-gauge section remained profitable. See HIL 171/208, report on the works of the narrow-gauge railway administration, May 28-June 3, 1911; HIL 171/215, report on the works of the standard-gauge railway administration, May 28-June 3, 1911; HIL 171/216, report on the works of the narrow-gauge railway administration, June 4-10, 1911.

49 Egyptian Gazette, July 20, 1907; "History of Mersa Matrouh Railway," 4; Wiener, *L'Égypte*, 458.

50 Xiaoyue Li, "Taming the Iron Horse: Austerity, Subversion, and Revolution in Colonial Egyptian Railways, 1876-1924" (PhD diss., University of Michigan, 2021), 45-46.

51 HIL 166/375-376, Gustav Kaiser to Shafiq, July 25, 1907.

52 Economies of scale is a concept highly applicable to assess railways' profitability. See for example, Daniel Graham, Antonio Couto, William Adeney, and Stephen Glaister, "Economies of Scale and Density in Urban Rail Transport: Effects on Productivity," *Transportation Research* 39, vol. 6 (2003): 443-58.

53 Guerville, *New Egypt*, 110-112.

54 FO 141/635, Edward Grey to Abbas Hilmi II, March 29, 1913.

55 "Report on Fuka-Mersa Matruh Extension Submitted by the Way & Works Department to H.E. General Manager," *Egyptian State Railways Magazine* 5, no. 4 (April 1936): 7-10.

56 Shafiq, *Mudhakkirat fi Nisf al-Qarn, vol. 2* (Cairo: 1936), 325; Mayer, "Abbas Hilmi II," 267.

57 Li, "Taming the Iron Horse," 61-62.

58 "History of Mersa Matrouh Railway," 4.

59 HIL 162/169-79, compensation for the Mariut railway's employees, 1906.

60 Kaiser suffered from a prolonged foot problem, which was probably the cause of his departure. See HIL 170/283-84, rapport, October 2, 1907. The last German-language report from Kaiser dates back to December 9, 1908, see HIL 170/343, rapport.

61 HIL 171/60-61, report on the steamer engineering, July 9, 1910.
62 FO 371/1636, agreement signed by Macauley and Ali Siddiq, November 12, 1906; HIL 172/49-50, ligne de Mariut, service des trains a partier du 1er Mai 1909.
63 "History of Mersa Matrouh Railway," 4.
64 Wiener, *L'Égypte*, 459.
65 HIL 171/327, report on the works of the Mariut railway, October 7, 1913.
66 HIL 171/230, letter of Ahmad Bey, July 5, 1910.
67 HIL 171/245-46, Daira Khassa to Saba Pasha, July 30, 1911.
68 HIL 171/231-32, Minister of Finance to Daira Khassa, July 2, 1911; HIL 171/245-46.
69 Shafiq, *Mudhakkirat*, 325.
70 Alfred Berry Brewster Bey served as the private secretary to the Khedive from 1891 to 1914. Shafiq's quote is in Shafiq, Madhakkirat, 325.
71 Jennifer Derr, *The Lived Nile: Environment, Disease, and Material Colonial Economy in Egypt* (Stanford, CA: Stanford University Press, 2019), 11.