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University of Southampton

Faculty of Arts and Humanities

School of Humanities

What Killed the Nile Boats?

A study of contemporary maritime cultural material

by

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Thesis for the degree of PhD in Archaeology

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Abstract

Faculty of Arts and Humanities

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Doctor of Philosophy

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Since the early days of Egyptian civilisation, Nile riverboats played a crucial role in the forming of Egyptian society.

Despite the wealth of Egyptian history regarding Nile sailboats, however, traditional sailing boats on the Nile rarely caught the eyes of specialists. During the last three centuries, starting from the late 1700s, various types of sailboats have navigated the Nile. While some traditional designs have persisted, modernization and changing needs have introduced different vessels.

The study of traditional Egyptian boats and maritime traditions has always been to link the current traditions with the ones of Ancient Egypt in a leaner way, overlooking the changes that might have happened through time. During the early days of this research, it was sought to understand what aspects of Egypt's maritime and riverine culture survive in the traditional ethnographic record. As a result, it hopes to provide a better understanding of the impact of modernization on local traditions and a more evident appreciation of some of the ancient Egyptian sailing traditions.

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Research Thesis: Declaration of Authorship

Print name: Ziad M Morsy

Title of thesis: What Killed the Nile Boats? A study of contemporary maritime cultural material

I declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission.

Signature: Ziad M Morsy..... Date:22/12/2023

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With the oversight of my main supervisor, editorial advice has been sought. No changes of intellectual content were made as a result of this advice.

This Thesis is dedicated to the soul of my late father Mohammed Morsy, who did start the journey with me but departed our world before I could finish the journey and make him proud.

Chapter 1 Introduction

According to Herodotus (2.5), "Egypt is the gift of the Nile," which has been considered the artery of life in Egypt since the beginning of Egyptian civilization. Moreover, internal water bodies such as lakes and other water bodies, namely the Mediterranean and the Red Sea, played a significant role in forming the country's history.

The Egyptians might have known of the sail at the end of the Pre-dynastic period, as suggested by many pots belonging to the Naqada I and Naqada II civilizations (Figure 1) around 4400–3000 BC. This is also suggested by the early use of hieroglyphics, which depicted a boat with a sail meaning "go south" or upstream (Figure 2) and a boat without a sail that meant "go north" or downstream (Figure 3) (Faulkner, 1964, pp. 195, 199; al-Manāwī, 1966, p. 129; Fabre, 2004, p. 89; McGrail, 2004, p. 16).

According to a recent study undertaken by the researcher (Morsy 2016), Egypt still has the potential in terms of remaining traditional sailing boats and traditional maritime cultural material to reveal specific aspects of its maritime past. Thus, the researcher conceived the idea of extensively recording and studying the surviving maritime cultural material record with a more thorough and systematic approach. However, during the four years of research, this thesis has changed a number of times, depending on the data gathered by the researcher, both during the desk-based assessment and during the fieldwork visits to the Nile, and finally, during the second-year progression review. More details about this change can be found in Chapter Three about data sources and methodologies.

This research is a cornerstone for studying modern and premodern Egyptian riverine traditions. Most importantly, it generates a record of the rapidly disappearing traditional riverine cultural material.

1.1 Research Aims and Objectives:

The River Nile was considered the highway of ancient Egypt and, until modern times, was the main route for transporting goods and people. The extensive use of the river led to the evolution of a sophisticated riverine transportation system, which in turn led to a long history of riverine and maritime traditions that lasted for thousands of years.

However, Egyptian traditional boats have not received as much attention from maritime ethnographers/archaeologists as those of other regions. Moreover, traditional boats and

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traditional fishing communities throughout Egypt are on the verge of extinction due to many socio-economic and geographical factors, which the researcher thinks are behind this drastic change in the extinction of traditions.

James Hornell's *Water Transport* was published in (1946), and was reprinted in (1970), is considered one of the best and earliest sources about traditional boats and seafaring traditions. After working for several years in India, organizing the fisheries of Madras, Hornell finally retired in 1924 and began his next career as an ethnographer of seafaring and maritime life. His extensive travels around the Indian Ocean world and East Asia led him to record different indigenous watercraft, sailing on Junks and Sampans, and many records of the watercraft of Polynesia (Hornell, 1970, pp. 86–90). Further travels brought encounters with watercraft of northern India, the Middle East, the Nile, and Northern Europe. Hornell includes in his book some interesting theories, concluding that some types of Nile boats on the Sudanese Nile are the missing link between modern river-going boats and those of ancient Egyptian civilizations.

Other Maritime Explorers or Ethnographers such as (H. W. Smyth, 1906) and Somers Clark (1920) also compiled records of traditional sailing boats worldwide, including the Nile, within their publications and research. However, there is a big problem when dealing with such resources, namely the Western perception of the Orient and the constant attempts to link the present day. Regardless, the researcher included an introduction to Mamluk and Ottoman Nile boats in Chapter Five to better understand the earliest examples of the same types of boats. This exact timeline had to do with the availability of literary resources and the ability to linearly link the traditions during the whole timeline. The historical and geographical background research is found in Chapter Four.

1.1.1 Research Objectives:

1. Compiling a list of types, names, and use of Nile boats during the specific study period (19th to 21st centuries) with a brief comparison with previous types from the Ottoman and Mamluk times.
2. Study the typology of traditional sailing boats and how it was adapted to work in their geographical context.
3. Studying the other factors that affected the typology, sailing traditions, and rigging.
4. Understand the impact of modern-day lifestyle on shipbuilding traditions in the study area.

5. Studying how far the ancient Egyptian Nile sailing traditions affected and shaped the tradition of the study period.

The research aims to provide a better understanding of the different types and uses of sailing boats in Egypt and the living traditions of shipbuilding, sailing, and seamanship that persist in some communities where different types of traditional boats are still in use. It will also elaborate on the impact of the different environmental conditions on the riverine/maritime communities and the types of vessels used.

In doing the research, a by-product came to be a key to these research objectives, namely collecting, creating, and archiving an extensive archive of Nile boat photographs. Depending mainly on archives and photographs available online, a long period of online research was conducted. To date, a total number of 3,939 photographs of the Nile have been collected and archived. Out of the total number of photographs, 1,712 photographs were further studied. The study and analysis of the photographs included the study of the typology of boats, the construction process, the evolvement of rigging, and evolving of hull shapes and materials. More details about the research process and problems are further discussed in Chapter 2, Chapter 3, and Appendix C.

1.1.2 Research Questions:

What happened to wooden sailboats on the Nile? The overarching research question is designed to track the change that happened to shapes, manufacturing techniques, and the use of wooden sailboats on the Nile during the last two hundred years. It will also discuss the rise in the use of metal hull boats and the implications that followed the change of material, and the reasons for this change.

In order to answer this question, I investigated the following:

A) Narrowing down the research timeline (Early 19th century until the present day). B) Different types of wooden sailboats on the Nile existed before the 19th century. C) Tracing the different boat types, their change process, and falling out of use. D) Change in the manufacturing process and materials. E) Different environmental and socio-economic factors affected the manufacturing process. F) The development of the metal-hull boats. G) The decline of wooden sailboats.

The research depends mainly on the following resources:

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1. Archival data: Mainly the governmental and private companies' data that details different types of boats, their capacity, dimensions, crew, building materials and their use, such as the Thomas Cook Archive.
2. Photographic Archives: Both private and institutional archives host many photographs taken in Egypt since the invention of photography in the 1830s until modern times, focusing on photographs that include boats.
3. Historical Resources: Focusing on the significant historical events that directly affected boat manufacturing and use.
4. Western Travellers Narrative: Using the large corpus of travelling narratives available to extract information directly relevant to the different boats on the Nile, their description, functionality, and indications of how they might have been made and maintained.

1.2 Previous Scholarly Work:

During the 19th and 20th centuries, many publications were concerned mainly with the systematic search and record of different traditional boats and ships. Usually undertaken by naval officers or enthusiastic yachters who, in their travels around the world, compiled information, descriptions, drawings, and pictures of bizarre and unusual boats. Most of the time, if not always, ancient Egyptian boats were at the top list of the traditional boats of the world, relating to the fascination of the Western world by the Orient and Egypt in particular, urged the early maritime ethnographers to draw a comparative line between past and current boat building and navigation tradition, especially on the Nile.

Henry Coleman Folkard (1827-1914), a barrister at law, produced one of the significant early works on the construction, characteristics, and operation of 19th-century sailing boats. His detailed descriptions of various boat types are enhanced by numerous illustrations and a chapter on nautical vocabulary; the first publication of the sailing boat book was in 1853. The history and career of Folkard are difficult to trace, except for the fact that he served as the Recorder of Bath from 1887 until his death in 1914. He published five editions of his book, including those on Ancient and Current Nile boats in the 19th century. Across the different editions, he included additional information about the various Nile boats that existed during his time ((Henry Coleman Folkard, 1863; Folkard, 1863; Folkard, 1870, 1901).

Robert Taylor Pritchett was a British visual artist born in 1828. Between 1860 and 1885, he sailed around the world. Later, in 1899, he published his book, "Pen and Pencil Sketches of Shipping and Crafts," which included original sketches of various sailboats and ships, including a few from

Egypt. Although he was either misinformed or confused about different types of Nile boats, he possessed invaluable insights regarding these vessels that hold great significance for this research. More discussion will be presented in Chapters Three and Four.

Another English yachtsman was Herbert Warington Smyth (1906), who compiled many different sailing watercraft from around the globe in his publication. He devoted a section to one specific type of Nile boat that he admired most, known as the "*gaiassa*." Smyth may have been the first to conduct a sort of ethnographic interview with a local boatman who owns one of the "*gaiassas*" on the Nile. He wrote about the sailing techniques employed by that boatman to maneuver his *Gaiassa* upstream with the help of his own two sons.

Among all the early maritime explorers in Egypt, Somers Clarke had the keenest eye when describing Nile boats of his era. Published by the British School of Archaeology in Egypt, an unusual paper by Clarke titled "Nile Boats and Other Matters" appeared in the periodical "Ancient Egypt and the East" in 1920. Clarke, a renowned architect and Egyptologist, wrote extensively about different types of Nile boats. He elucidates the variations in boat shapes and rigging systems between the 1900s and early 1920s with great attention to detail. Furthermore, he devotes the second part of his article to a type of boat called "*nuggar*" or "*naggr*", which is typical in Sudanese waters.

During the same period, Somers Clark was active on the Nile as a Western scholar of linguistics who studied Arabic, among many other languages. The French linguist Georges-S raphin Colin spent a significant amount of time between 1920 and 1921 at Cairo's two main Nile ports. During his fellowship at the L'Institut Franais d'Arch ologie Orientale, Colin (1920a, 1920b) collected, archived, and researched the Nilotic terminology of Cairo during that time. He published his findings, remarks, and corrections in the Bulletin de l'Institut Franais d'Arch ologie Orientale (BIFAO 20). This extensive study of Nile sailboat construction and Nilotic terminology remains the most comprehensive research on the subject to date. Colin published his research in a two-part article titled "Notes de Dialectologie Arabe", where he explored the origins of Nilotic terminologies. Assuming that the terms were derived from Coptic, Colin was surprised to discover that the majority of terminology had Mediterranean origins, rather than direct descents from the long-lost hieroglyphs as expressed in the modern Egyptian Coptic language. This primary source of information is valuable and will be considered throughout the entire thesis.

In his pursuit of tracing the origins of water transport vessels, James Hornell (1942) presumed that the North Sudan Nilotic watercraft is the last descendant of the Ancient Egyptian Nile boats and worked diligently to support his theories by comparing these types of boats to the Dahshur boats. In his research, Hornell overlooked what was a "modern tradition" during his time in the 1930s,

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such as the various Nile sailing boats north of the first cataract, how they were constructed, loaded with cargo, and navigated. Therefore, his analysis and description of the different types of Nile boats remains incomplete.

Al-Manāwī (1966) in the Arabic Library on the River Nile included a section about various Nile boats and navigation accounts throughout Islamic Egypt, particularly focusing on Mamluk and Ottoman resources. Several encyclopedias and dictionaries of watercraft have been published, compiling lists of different types of boats in Egypt and beyond, such as *Islamic Ships: a Lexicon* by Darwish al-Nakhīlī (1979) and *A Dictionary of the World's Watercraft from Aak to Zumbra* by Greenhill (2001). Additionally, other collective studies examining various aspects of Ancient and Modern Egyptians were conducted during the 19th century, offering a brief description of Nile boats, which will be discussed in more detail later in this thesis.

Various scholarly works have focused on the Egyptian navy, tracing its history from ancient times through its modern period. A collective publication by Alexandria University (Sa'īd, 1973) covers the history of the Egyptian Navy from Ancient Egypt up until the 1970s. The study primarily examines naval fleets, with only a brief mention of the Nile fleet during the Islamic era. Other studies within the same scope include Khānkī (1948) and Mubāshir (1995)

An ethnographic and archival study by 'Abd al-Ḥamīd Sulaymān (2000) on Nile navigation in Ottoman Egypt (1517 – 1798) was the first of its kind on this topic. Sulaymān, a professor of Modern History in Egypt, published a comprehensive book covering all aspects of Nile navigation, boat-building traditions, boat typology, and the socio-economic dimensions of Nile traditions during the Ottoman era, drawing from documents of “al-Maḥākīm al-shar'īyah,” or legal courts in Ottoman Egypt. He also included ethnographic interviews with boatmen and boat owners in the footnotes, which assisted him in identifying different traditional boat terminologies that he later compiled in an appendix to his publication. Since he concentrated solely on the Ottoman period, Sulaymān did not delve deeply into any of the modern sailing Nile boats from the 1990s, offering only some brief mentions in his footnotes. His work was entirely based on the legal courts of Ottoman Egypt, without examining other aspects of boat-building traditions.

Other archival studies have been conducted over the past few decades, all using documents from the Egyptian National Archives in Cairo, such as (Jomard, 1809, pp. 112–123) regarding the Khedivial postal services (1871 – 1898), its development, evolution, and ultimately, the sale and dismantling of its boats in the early years of the 20th century. This study concentrates on describing various clerical documents of the Khedivial Postal Service initiated by Khedive Isma'il in 1863. Abo Salem primarily focused on steamboats and tugs, listing the different names, sizes, and horsepower of each vessel. His writings make no mention of sailing boats of any kind.

Fāṭimah ‘ilm al-Dīn (1989) examined the evolution of internal transportation systems in Egypt during the British imperial period (1882 – 1913). One section of her study focused on the Nile transportation system between 1882 and 1913. While she offers valuable insights, it is apparent that much of the information in the Nile transportation section is drawn from an earlier study by Aḥmad al-Ḥittah (1967)

In addition to previous discussions, one of the newest publications is from the Centre d'Études Alexandrines Pomey (2015). It exclusively examines the sailing traditions and ethnography of the Egyptian Northern lakes and the Nile Delta, particularly Lake Burullus and Lake Manzala. This publication consists of articles by various researchers who investigate wooden boat-building traditions, fishing techniques, and the sailing customs of the communities of the lakes.

An article published in the *Journal of Ancient Egyptian Interconnections* (Koutkat et al., 2017) focuses on documenting "The Vernacular Boats of Egypt's Natural Lakes: Documentation of Living Maritime Heritage," which describes various fishing boats utilized in the Egyptian lakes. The article relies on a concise survey conducted by Koutkat, who recorded the names, overall dimensions of the boats, propulsion techniques, and a list of Arabic terms without any accompanying explanations or descriptions article.

All previous scholarly works will be discussed in more detail in Chapter Two.

1.3 Filling the Gap

Despite Egypt's rich and ancient maritime history, coupled with the significant volume of research and publications on ancient Egyptian riverine and maritime technologies, both modern and pre-modern sailing traditions have been largely ignored. Only Colin (1920a; 1920b) provided a thorough analysis of the Nilotic terminology related to boatbuilding traditions and sailing on the Nile, approaching the topic from a linguistic perspective rather than a maritime one.

The scarcity, or even absence, of archaeological material regarding the Nile sailing boats from the 18th and 19th centuries necessitated reliance on literary and photographic resources, which complemented ethnographic research. However, these resources are all influenced by the perceptions of the research conductor. Therefore, a set of cross-referencing methodologies is applied during this research to ensure that the findings are not biased in any way or form.

As mentioned above, this research draws upon several different sources of evidence, focusing on the contemporary writings of Western travellers during the 18th, 19th, and 20th centuries. Furthermore, the research cross-references the information found in these accounts with the extensive corpus of photographic archives from the same study period. Finally, the ethnographic

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concourse addresses the gap in information where resources were limited during the late 20th century and the early 21st century.

From the previous scholarly review of traditional Nile boats from the 18th to 21st centuries, I identified a significant gap in both the study of contemporary and traditional Nile boats. Thus, this research aims to better understand current Nile sailing traditions and examine the socio-economic and natural factors impacting boat-building, materials used, and sailing practices on the Nile.

This thesis begins by outlining the research framework, identifying the historical and geographical background of the study, and examining various aspects that influence Nile navigation, boat-building traditions, and materials. The rationale for adopting this approach is to encapsulate the different factors that have impacted boat-building traditions and to provide a proper context.

The selection of a theoretical framework for research on Nile sailing boats over the past three centuries primarily depended on the research questions established in the previous section, and could be divided into the following:

1. **Cultural History Framework:** To explore how boats reflect and shape the cultural identity, traditions, and practices of the Nile communities throughout the period of this research. By investigating how boatbuilding, navigation, and the use of boats are embedded in cultural contexts.
2. **Maritime Archaeology Framework:** This was a key aspect of the primary research, which examined material remains and historical contexts of boat construction, usage, and navigation by analysing archaeological evidence, artefacts, and submerged structures related to Nile sailing boats. However, the absence of any archaeological evidence of boats from the 18th century onwards prevented me from using this particular theoretical framework. This resulted in a change in the research methodology and framework.
3. **Economic and Socioeconomic Framework:** This examines how changes in boatbuilding and navigation practices are connected to economic shifts and social structures. It also explores the economic aspects of boatbuilding, the trade facilitated by boats, and the impact on local communities' economies.
4. **Technological Innovation Framework:** The evolution of boatbuilding technologies and their impact on sailing traditions is a key part of the thesis. I have endeavored, as much as possible, to trace technological advancements and innovations in boat design, materials, and propulsion. By focusing on sailboats as a unique agent of innovation, I reflect the technologies of their era age.

5. Environmental history Framework: This study examines the interaction between Nile sailing boats and the natural environment, taking into account ecological factors. It explores how environmental changes influence boatbuilding materials, techniques, and navigation practices..
6. Globalization and Trade Framework: Investigating how external factors, such as trade and globalization, influence boatbuilding and navigation in Egypt, particularly under the reign of Muḥammad ‘Alī and his family. It examines the connections between Nile boats, trade routes, and the global economy trends.
7. Colonial and Postcolonial Framework: Colonialism significantly influenced boatbuilding traditions on the Nile, while Postcolonialism altered the trajectory of these traditions. This framework examines the changes in boatbuilding practices during colonial times and how they persisted or transformed after independence, particularly following 1952 revolution.
8. Heritage and Memory Framework: The original research proposal heavily relies on the cultural heritage memory of boatbuilders and sailors on the Nile, examining how the memory and preservation of Nile sailing traditions contribute to cultural heritage. However, following the initial fieldwork in 2017, I could not find any evidence of wooden boatbuilding on the Nile. From the few enquiries I made during the fieldwork, it was believed that wooden boatbuilding became extinct on the Nile approximately 40 years ago. Furthermore, there were no efforts to preserve boatbuilding techniques traditions.
9. Photographic History Framework: Exploring the history of photography as a medium and its role in documenting cultural and historical phenomena, while tracing the evolution of photographic techniques and styles in capturing Nile sailing boats over time.

1.3.1 Thesis Outline

The outline for the thesis chapter has changed following the second progression review. According to the regulations of the University of Southampton, each postgraduate student must pass three milestones, which are divided into an annual progression review. The second progression review takes the form of a mini-viva, during which two internal examiners from the archaeology department examine the produced draft and discuss the research with the student for several hours. Following this, the student becomes a candidate for a PhD. During the second progression review, an important highlight from the examiners led to a significant change in the chapter's outline. Consequently, the new outline consists of seven chapters, in addition to an introduction and conclusion. This change arose from the results of the first fieldwork I conducted in 2017, along with my visit to the Thomas Cook Archives in Peterborough. The two activities led

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me to conclude that there are no longer any wooden sailboats on the Nile, and that the tradition has long been lost.

During the fieldwork, I aimed to identify and closely examine potential maritime traditions and maritime communities along the River Nile. In March 2017, with the assistance of my partner Mai Ghanem, we visited a total of 91 sites, which extend from Aswan to Cairo. Full details of the sites can be found in (Appendix A).

Chapter One, the current chapter, presents an introduction to the topic and a review of previous research. Chapter Two encompasses all the literature reviews carried out by the researcher throughout the research timeline. Chapter Three details the various sources of data, both primary and secondary, along with the different methodologies employed in the research. Chapter Four establishes the historical and geographical context of the study area. It offers an overview of modern Egypt's history from the French Occupation by Bonaparte to the present day, concentrating on the socio-political and socio-economic factors related to boat-building and navigation on the Nile. This section is not intended to provide a comprehensive historical record of Egypt, but rather a succinct examination of the historical aspects that have directly influenced boat-building traditions and Nilotic navigation (from the researcher's perspective). The second section of Chapter Four presents a geographical background narrative of the Nile, its floods, and the public projects undertaken across its waters, which have directly impacted boat-building traditions and Nilotic navigation Egypt.

Chapter Five is the central chapter of this thesis, presenting a new way to contextualize the various types of Nile boats. Initially, it examines medieval sources and resources that describe Nile boats and their typology, followed by the researcher's notes and observations on different typologies of Nile boats during the 19th and 20th centuries. Lastly, there is a brief account of the different arsenals and boatyards along the Nile discussed.

Following the introduction and scene-setting in Chapter Five, Chapter Six highlights the pivotal moment that transformed boat-building traditions on the Nile during the British annexation and subsequent occupation of Egypt in the last two decades of the 20th century. This chapter explores how the introduction of Western-made hulls influenced the Egyptian boat-building community's preferences, leading to a significant shift in Nilotic boat-building traditions in Egypt.

Chapter Seven concludes the fierce battle between the old and modern traditions and examines how various geopolitical factors influenced Egyptians' perspectives on their riverine heritage, ultimately contributing to the decline of wooden boat-building on the Nile.

Chapter Eight includes the final remarks on a dying tradition of boatbuilding techniques that lasted for centuries, where modernity favoured metal barges with diesel engines over sustainable and eco-friendly wooden sailing boats on the Nile. This chapter sets the current scene of the riverine transportation system on the Nile. It outlines the various social and economic factors that led to this significant shift in Nile boatbuilding traditions, which in turn created “new traditions” where modern inventions by Egyptians are perceived as old traditions through an Originalist lens. The journey of Nile boatbuilding traditions concludes with a discussion and concluding remarks on all the findings from this research project. Furthermore, future projects and potential new data that were not included in this thesis is mentioned. Additionally, several appendices are provided in this thesis, including various sites of interest, a database of online and personal archives featuring historic photographs of Nile boats, which will also encompass a brief discussion on archiving the vast quantities of photographic data collected during the research period and making it accessible for future inquiries field.

1.4 Chapter One Figures

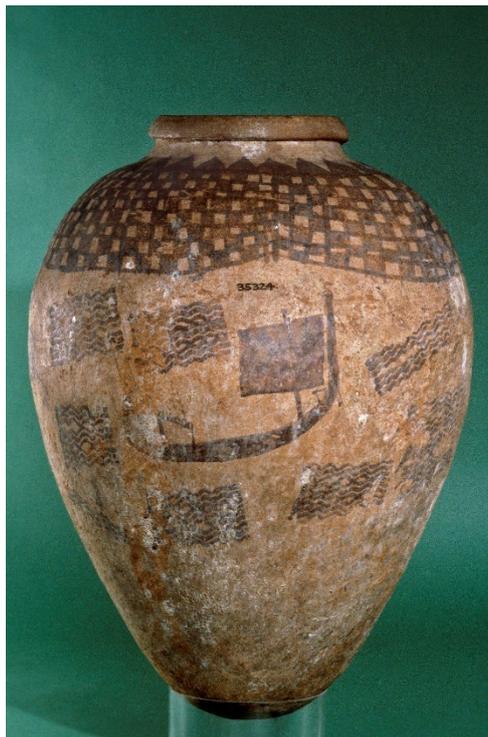


Figure 1: Naqada II; Redware pottery jar; representation of a ship under sail beneath chequerboard pattern. British Museum EA35324. © The Trustees of the British Museum. (CC BY-NC-SA 4.0).



Figure 2: Sail upstream, travel southward, is determinative with a boat under full sail. Boris after Faulkner 2017: 239)



Figure 3: Travel downstream, northwards, is determinative with a boat without sail. Boris after Faulkner 2017: 245)

Chapter 2 Literature Review

2.1 Introduction

During the identification of the precise scope of the research period, it was essential to consult as many available literary resources as possible on the topic. In the initial months of the research, I believed that the construction of the High Dam in Aswan in 1970 had the most significant impact on Nile navigation, thus being directly related to considerable changes not only in Nile boatbuilding traditions but also in the navigation customs in the Egyptian region north of the Dam. However, according to the preliminary fieldwork conducted in April 2017, the introduction of new hull materials and sailing traditions occurred long before the concept of constructing the High Dam. This prompted yet another change in the research methodology and scope.

I presumed that the traditional hull construction and materials of Nile boats had not changed, at least in the last two hundred years. However, the initial fieldwork, which included a systematic review of the Nile Valley, revealed that wooden hulls have not been used for medium and large cargo boats for at least four decades. Metal hulls gradually replaced wooden hulls and ultimately came to dominate the Nile River.

Consequently, the research outline was revised, requiring further investigation into the issue. This chapter will provide a review of the literature produced by Western travellers. These sources are considered primary resources for this research, as they were written by eyewitnesses who either lived in or visited Egypt over the last two years centuries.

I encountered yet another limitation during my research, specifically related to studies on Nile boats. There is a significant scarcity of this type of research. Moreover, books and articles discussing life in Egypt over the past three centuries often fail to mention or consider boatbuilding traditions, boatyards, shipwrights, or even various types of boats. A few resources compile different types of boats used in Egypt during the Ottoman period, Muḥammad 'Alī's family era, or modern times, but they lack any in-depth study of the boats themselves or the communities that utilised them. Further examination of these resources revealed that they largely replicate each other, lacking an analytical or systematic approach to the study of Nile boats. There is only one resource written nearly a century ago that encompasses all the different aspects of studying Nile boats. These resources will be discussed in the upcoming discussions sections.

The second part of this chapter includes supplementary resources, particularly photographs of Egypt and the Nile. Since the advent of photography, countless photographers have travelled to

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Egypt to capture its splendour. Consequently, all travellers along the Nile carried their cameras, with many documenting every facet of their journey to Egypt. This section will also investigate how the West perceived the East, either through written travel narratives or by selectively framing and capturing various elements in their photography photographers.

The photographs of Nile boats serve as the cornerstone evidence and foundation of this research. In the pages that follow, I shall draw upon this understudied source of information to trace the evolution of boatbuilding traditions on the Nile over the past three centuries. Cross-referencing the photographs with the limited written sources will enhance our understanding of what transpired with traditional Nile boats sailboats.

2.2 Western Travellers' Accounts

Countless European and American travellers have journeyed up the Nile and back. Some have ventured beyond the second cataract to the sources of the Nile, while others have been content with a trip to Abu Simbel and the northern Nubian territories. Based on the data I collected during the early stages of the research, various themes and types of travellers emerged after reviewing over 300 books written by Western explorers from the late 18th century to the first half of the 20th century. The types of Western travellers are categorised into the following:

1. Antiquarians and treasure hunters, who later came to be known as archaeologists, sought antiques from Egypt. While most Western travellers focused on obtaining such items, this was both their initial and final goal during excavations of ancient Egyptian tombs and temples. Notable figures like Giovanni Belzoni, along with many others, satisfied the cravings of Western nations for Egyptian artefacts Antiquities.
2. early explorers, whether commissioned by their government or by an independent Western exploration society, possessed a profound sense of adventure, fuelled by their ambition to uncover what lay hidden in the heart of Africa, particularly through various expeditions to locate the source of the Nile, including those led by James Bruce (1790).
3. Pilgrims, Egypt marked the start of pilgrimage tours to the holy lands; it begins in Cairo, tracing the footsteps of the Old Testament through the Eastern Desert and Sinai towards Jerusalem.
4. Travellers with a passion for drawing, poetry, and hunting, who took their friends on an adventure to the fabulous Orient—both men and women—have long lingered by the Nile for many months and sometimes even years. Other travellers seized the opportunity to write guidebooks, giving their countrymen and women a taste of the Orient home.
5. Professional tourers, Thomas Cook conducted his first mass tourism Nile voyage on a steamer in 1870, and since then, organised tours have blossomed into a thriving business until the First World War. An annual update of the routes, hotels, prices, and advice for Western travellers was published under Thomas Cook's name in English, French, and German. Other companies made their way into Egypt, such as the Anglo-American Nile Company and others who did not possess the same influence that Thomas Cook and Son Co. wielded over the Egyptian Royal Family.

The output of three centuries of travelling accounts falls into the following categories:

1. Diaries: as seen in the genuine day-by-day accounts of travellers or explorers, which are collected, edited, and published into a cohesive volume or two.

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2. Letters: Numerous Western travellers used the postal system inaugurated by Muḥammad 'Alī to send correspondence to family, friends, and loved ones back in Europe. These letters were later compiled into a book and published either by the writer or by a family member.

3. Travel Guides: The main purpose of the traveller was to describe the current modes of travel in Egypt and to outline various prices for boat rentals and provisions as guidance for other Westerners contemplating a visit to Egypt in the future.

4. Accounts: this is what most travellers do—write one or two books describing their journey from their home city to Egypt, detailing their modes of travel, various encounters, and highlights of their visit to Egypt.

2.2.1 Early Discoveries on the Nile

Between 1768 and 1773, James Bruce undertook his journeys to discover the sources of the Nile. In 1790, he published his recollections of these expeditions in a five-volume work titled “Travels to Discover the Source of the Nile in the Years 1768, 1769, 1770, 1771, 1772, and 1773.” In this work, he provided a richly detailed account of Egypt, Nubia, Abyssinia, Arabia, and more. In the first volume, Bruce hired a boat to travel from Alexandria to Upper Egypt as part of his journey. He described this experience in detail, providing illustrations of the various types of Nile boats, particularly the one he hired for his ascent. He presents a first-hand account of the boat without referencing other writers (Figure 4).

2.2.2 The Peak of the Orient

In the late 18th century, Egypt began to capture the attention of various European powers, particularly France and England. The British did not recognise the significance of Egypt until France's plans to annex it came to light. In 1798, Napoleon Bonaparte, the General of the French Army, led an expedition to Cairo and swiftly took control. Always intrigued by Egypt, Napoleon brought along a small contingent of 167 scientists and artists with his regular troops to catalogue and preserve every aspect of life in the Nile Valley, spanning from Ancient Egypt to the Modern Era. This included Natural History, Topography, Antiquities, and both Ancient and Modern lifestyles. Such research culminated in the extensive *Description d'Egypte*, published in 30 large volumes, which is regarded as Napoleon's greatest achievement in Egypt.

The first volume of the *Etat Modern* (Lane, 2000, pp. 20–21), or *Modern Life*, provides a brief account of Nile boats. It details the number of boats, their capacity in tons, and their French and

Arabic names/types, but lacks further information about boat-building traditions or descriptions of these vessels, aside from the number of sails they employ (Figure 5).

Nearly thirty years after the publication of the esteemed *Description de l'Égypte*, Antoine Barthelemy Clot, commonly known as Clot-Bey, the chief surgeon of Muḥammad 'Alī, authored another *Description of Egypt*, focusing on the health situation within the country. Clot-Bey (1840, pp. 416–420) was the first to classify and describe various types of Nile boats in his section on modes of transport and communications on the Nile.

Sir John Gardner Wilkinson was the most cited writer by Western travellers during the latter part of the 19th century. He spent twelve years in Egypt from 1821 to 1833. His book, *Modern Egypt and Thebes*, published in 1843, is among the most informative writings about Egypt during that time period.

Wilkinson (Wilkinson, 1843, pp. 208–210) may have derived his description of Nile boats from Clot-Bey, incorporating additional types and names that Clot-Bey did not include in his account of leisure and cargo boats. Consequently, travellers often cited him in their writings about the Nile boats. Wilkinson's book was among the first travel handbooks published by John Murray, intended for middle-class travellers and typically authored by members of the Royal Geographical Society and other experts. Wilkinson returned to Egypt in 1841 to gather information for his guidebook. The routes for travelling in Egypt and the modes of travel remained unchanged until the latter half of the 19th century, when Thomas Cook pioneered his tours, which, as will be discussed in later pages, transformed the ways of exploring Egypt in general and the Nile in particular.

Before 1851, travellers and explorers arrived at Alexandria by ship and then took an overland route to the Nile delta before pursuing a Nile boat to Cairo (Bartlett, 1850, pp. 30–40; Lane, 2000, pp. 20–21). Upon reaching Cairo, the first order of business was to secure a cabin boat (either a qanjah or a dhahabīyah) in order to start purchasing provisions, refurbishing and cleaning the boat, and, most importantly, acquiring a flag to hoist on the main mast. To pass the time, explorers would embark on day trips around the city to see the Pyramids and the Sphinx. A contract was drawn up at the consulate and signed by both the boat owner and the traveller (Wilkinson, 1843; Gordon, 1902, p. 18,19). There were some exceptions to this, where travellers chose to buy their own boat. Lady Duff Gordon spent nearly eight years in Egypt from 1862 to 1869, during which she owned a dhahabīyah named *Urania*, which she typically rented out during the winter while residing in her house situated among the ruins of Luxor Temple; she passed away on board her boat and was buried in Cairo in 1869 (Gordon, 1902).

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Once everything is in place, the boat only moves during daylight. The accounts detail various accidents and incidents, such as running aground, colliding with another vessel, capsizing, and the most significant aspect of the journey: foul winds, which require the crew to track the boat throughout the day. Typically, explorers and travellers seldom complain about wasted time; they often carry a library for reading, paper for writing, canvases for drawing, and, most importantly, guns for shooting and protection (Edwards, 1890; Kelly, 1920, p. 39; Lane, 2000, p. 302).

Sightseeing along the route to Aswan remains consistent. Typically, in Aswan, travellers spend a few days. Some return to Cairo, while others continue towards the Cataracts. As will be elaborated in the upcoming chapter, the First Cataract in Aswan hindered smooth navigation between the North and South. The effort to navigate the cataract or shallāl is one of the most vividly described scenes in all accounts. This scenario involves an agreement between the Dragoman and the shaykh of the shallāl to haul the boat up over the rapids (Figure 6). Depending on the water level, current, and winds, this journey can take up to three days. Travellers often utilise this time to explore the antiquities, particularly the Philae temple, located 2 km upriver from the cataract (Figure 7). A donkey ride of about an hour and a half takes tourists to the temple area, followed by a brief boat ride to the island of Philae. Generally, travellers would spend the night there until their dhahabīyah was freed from the shallāl (Warner, 1881, pp. 234–251; Edwards, 1890, p. 197; Humphreys, 2015, pp. 67–71). However, some travellers opt to negotiate with a different boat for the journey between the two cataracts, sending back the boat they arrived on from Cairo (Abū Sālim, 2009, pp. 141–143).

Since the rediscovery of the great Abu Simbel Temple in 1813 by Jean Louis Burckhardt, he was the first to begin cleaning the temple entrance; later, when he met Belzoni, he discussed the task with him (Figure 8). However, Belzoni also failed to clear the sand (Figure 9), located 300 km south of the first cataract; the temple has been a renowned destination for travellers. Between the First and Second Cataracts, several ancient Nubian and Egyptian temples and tombs are scattered across the desert, such as Kalabsha, Wadi Al-Sebua, Dindour, and many others (Figure 10). Ultimately, the traveller would arrive at Wadi Halfa on the Second Cataract and embark on an overland excursion to the great rock of Abuosir, where the “Grand Canyon” of the River Nile could be seen (Figure 11).

The return trip usually takes half the time, primarily depending on the strength of the Nile’s current. It also includes stops at various sites. In Cairo, the traveller could either continue the journey through the desert to visit Palestine or return to Europe Alexandria.

A change in travel mood occurred in 1821 when Muḥammad ‘Alī completed the al-Maḥmūdīyah canal, leading to regular boat traffic. During this leg of the journey, travellers would take a boat

from Alexandria to the Rosetta branch, change boats, and sail to Cairo, where they would begin the process mentioned earlier. Then, between 1836 and 1841, Waghorn successfully petitioned the Pasha for the exclusive right to transport passengers between Alexandria and Suez on the newly established overland route through Egypt to India. The system of conveying passengers through the al-Maḥmūdīyah canal with barges towed by horses was viable, and when P&O took over operations, steam tugboats were employed on the canal. In 1851, ‘Abbās Pasha (1848 – 1854) inaugurated a monthly service of steamers between Cairo and Aswan, enabling passenger boarding. During the same year, he allowed the British to construct the first railway line between Alexandria and Cairo, which was not completed until 1856 (al-Ḥittah, 1967, p. 228). By that time, travellers could take the train to Cairo and commence their Nile journey from Bulāq. Changes occurred rapidly during the subsequent decades as railways facilitated travel up to Assiut. However, this did not diminish the allure of sailing on the Nile; rather, it meant that travellers had more options when exploring Egypt. The reign of Ismā’īl (1863 – 1879) witnessed the globalization of Egypt and significant advancements in the country’s infrastructure and transportation systems; foremost among these was the opening of the Suez Canal, all of which transformed how travellers explored Egypt.

2.2.3 Thomas Cook and the Early Days of Mass Tourism

Tourism, as we know it today, originated in Britain during the 19th century. It is fair to argue that Thomas Cook, while not the only individual organising tours, played a pivotal role in establishing the modern aspects of tourism that we continue to use today. In 1841, he successfully arranged a journey for 570 workers from Leicester to Loughborough via railway to attend a meeting and enjoy the entertainment provided by a band. In 1845, he organised the first official group trip from Liverpool to Caernarfon, offering a complete package tour that included all excursions by rail and steamer. He quickly expanded his trips to Europe in 1855 and established his business there in 1862, followed by an expansion to America in 1866. Thomas Cook aimed to make travel accessible to everyone at the lowest possible costs (Speake, 2003, p. 1185; Humphreys, 2015, pp. 11–13).

Cook returned in 1869 with his first group of tourists to Egypt, persuading the Egyptian government to lease him two of Khedive Isma’īl’s steamboats to accommodate himself and his tourists on the river journey to Aswan and back to Cairo. The entire trip took 13 days upstream, 2 days in Aswan, and 6 days downstream to Cairo, before proceeding to Alexandria. In November 1869, Thomas Cook successfully secured space for a small number of travellers on the Austrian Lloyd steamer *America* to Egypt for the inauguration of the Suez Canal (Humphreys, 2015, pp. 47–52).

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What began as two steamboats in 1869 expanded to five, including the notable Beherah, the largest of all Khedivial boats. In 1871, John Mason Cook, the son of Thomas Cook, along with his business partner, became an equal partner, and from that year on, the company was known as Thomas Cook & Son (Humphreys, 2015, p. 51). According to contracts with the Egyptian government, Thomas Cook & Son required modifications to the steamers used for tourists to better fulfil their purpose (Abū Sālim, 2009, pp. 141–143). Additionally, John purchased a modern house in Luxor and established the first hotel there in 1876-77. The hotel was consistently in high demand as it was the only one in town, which led to multiple expansions of the building in subsequent years. In 1879, Thomas was compelled to retire, and John became the sole manager of the company.

By 1880, John managed to renew the monopoly contract with the Egyptian government and acquired a new steamer from the government, which he completely refitted to accommodate 60 passengers, marking the largest number of passengers to sail up the Nile at once. Later, in 1881, Cook & Son became the official Khedivial Mail Service provider on the Nile. At the same time, John's business acumen led him to start acquiring the finest sailing boats or dhahabīyah on the Nile; he even constructed one named Philites. Thus, starting the 1880-81 season, Thomas Cook & Son offered its customers numerous options to explore the Nile, either by steamers or Sailboats.

Until 1886, no steamboats were constructed specifically for passengers. Consequently, Cook & Son ordered their first purpose-built Nile fleet. Therefore, the company needed to find a site for its boatyard and a contractor to build their desired steamers. Two steamers were constructed on the Clyde River by Fairfield Govan of Glasgow. Both vessels featured steel hulls and superstructures, designed in the style of American river steamers, complete with side-mounted paddlewheels. The completed hulls and engines were dispatched to Egypt in sections and transported by train to Cairo, where Thomas Cook & Son leased a plot of land in Bulāq to establish their boatyard. The steamers measured 48 by 6 metres, with a draft of approximately 2 metres. The Tewfik and Prince 'Abbās were the largest steamers on the Nile at that time. The crews of both vessels were entirely Egyptian, with the exception of the engine supervisors, who were Scottish. In the same year, John Cook acquired even larger steamers from France. One of these had already been built and was no longer required by the French government. These two new boats were towed to Alexandria, then to the mouth of the Nile at Damietta, and up the Nile, where they scarcely fitted into the Delta Barrage's navigation lock. Ultimately, both steamers, Rameses and Prince Muḥammad 'Alī, arrived in Cairo in 1887 to be fitted with saloons and furniture, and were ready for service within a week. Three more steamers were added to the service in the following year, resulting in departures to the first cataract doubling from weekly to biweekly departures. (Humphreys, 2015).

Thomas Cook & Son introduced express service, significantly reducing the time and cost of Nile trips. Alongside the Express, C&S offered Superior service in 1889 aboard what they termed the “steam Dahabeah” Nitocris, a luxurious steam vessel that accommodated just eight passengers. By 1888, the company possessed only two sailing dhahabīyah among 136 operating on the Nile at that time, both featuring wooden hulls. Nevertheless, John resolved to increase the number of C&S dhahabīyah to 13 boats within five years. Humphreys (2015) compiled a catalogue of all Thomas Cook & Son boats on the Nile, based on his research in the Thomas Cook Archives. Once again, the shipyards on the Clyde were pivotal in converting the wooden hulls of the dhahabīyah boats to steel hulls. Following the original design of a dhahabīyah, the hull was constructed in Glasgow and transported in sections to Cairo, where it was assembled, and all the rigging was added at the local boatyard in Bulāq. An in-depth analysis of this information and further discussion will be undertaken in Chapters Four and Seven.

Thomas Cook died in 1892, followed by his illustrious son, John Mason Cook, who passed away in 1899. This marked the beginning of a new era for the Thomas Cook & Son administration. The company was subsequently managed by two of John’s sons, who followed in their father’s footsteps and expanded the business. From that year onwards, C&S was no longer the sole service provider in Egypt, as numerous companies began their operations. Although these companies offered cheaper and quicker services on the Nile, C&S retained its position at the forefront of the tourism industry country.

2.2.4 The World Wars

In 1914, World War I began in Europe. Although Egypt was not one of the battlefields of the First World War, it served as a base for the Allies’ troops and as a recovery hospital for the wounded. Tours on the Nile were halted because of the war. A notable decline in published travel accounts during this period was evident. Many of the Nile steamers from both major companies, C&S and AAC, were refitted to transport troops or were used as hospital ships (Figure 12, Figure 13).

Nevertheless, the scarcity of literary resources from the period was offset by an abundance of photographs taken by troops during their time in Egypt and along the Nile, as will be discussed in the second section of this chapter. Four years later, following the conclusion of the war in 1918, tourism resumed, and Nile travel returned. In 1922, when Howard Carter discovered the tomb of the boy-king, Tutankhamun, vast numbers of travellers flocked to the Nile Valley, and there was not an empty cabin on a Nile boat for years. The transportation of the treasure to Cairo was conducted by Thomas Cook & Son.

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A significant rival to the Nile boats was the Wagon-Lits' Orient Express train, which provided travellers with an affordable and swift means to visit the important ancient sites in Luxor and Aswan. In 1928, Wagon-Lits acquired Thomas Cook & Son. A year later, the financial crisis in the USA occurred, resulting in a dramatic decline in the number of travellers, which led to the decommissioning and liquidation of the C&S fleet in Egypt. Between 1934 and 1939, a total of twelve ships were sold. The outbreak of WWII further hindered the situation for Nile tourism; most of the remaining steamers were once again requisitioned by the British Army for wartime use. Finally, between 1948 and 1950, Cook & Son opted to sell their remaining boats in Egypt.

A handful of steamers and sailboats have survived into modern times. Most of these "authentic" 19th-century boats are owned by French citizens; a total of four dhahabiyah and one steamer are still hosting tourists on the Nile. Most of them are based in Esna.

2.2.5 Maritime Explorers and Ethnographers

A distinct thread in the literature explores Nile sailing boats as ethnohistorical subjects. Ethnographers and researchers such as Hornell (1938, 1970), Smyth (1906), and Clark (1920) dedicated years to collecting, studying, and recording traditional boats not only in Egypt but around the world. Their work aimed to establish connections between Ancient Egyptian maritime traditions and those of the 19th and 20th centuries. However, a critical discourse has emerged, highlighting the tendency to overlook and misrepresent "modern traditions" in favour of linking contemporary practices with the ancient counterparts.

One of the key works on Nile boats ever published to date is the ethnographic and linguistic study conducted by Georges Colin between 1918 and 1920. As mentioned previously, Colin was a philologist, historian, researcher, and diplomat, who was hosted in Cairo at the L'Institut Français d'Archéologie Orientale from 1918 to 1921.

As a philologist, Colin focused in his earlier publications on the modern and ancient standards of the Arabic language in Egypt. However, during 1920 and 1921, he became fascinated by the traditional sailboats on the Nile, prompting him to begin studying them.

Colin's main assumption, shared by many authors of the 19th and 20th centuries, was that boatbuilding traditions and terminology are extensions of the rich Ancient Egyptian Nilotic traditions. However, he confesses in the introduction to his work that this was not the case. In studying the technical terminology of boatbuilding traditions in the early 20th century, Colin discovered that most of the terminology used was Arabic or Mediterranean in origin.

Hornell (1942), who pursued the shell-first boat to Sudan, emphasised the connection between the Dongola boats and the boat finds in Dahshur, which are currently housed in the Egyptian Museum in Cairo. Although he mentioned the boat briefly, noting it on the Nile en route to Sudan, he neglected to record it due to a lack of interest in any "modern traditions." Hornell's research on the frameless boats of the middle Nile included significant insights into the various boatbuilding traditions in Upper Egypt, Nubia, and Sudan. All boats discussed by Hornell adhere to the same building concept, which involves assembling the planks of the boat without the need for frames. This contrasts with the boatbuilding methods prevalent in Egypt during the study period. One of the key strengths of Hornell's work lies in his direct and first-hand observation of the boatbuilding process on the Nile. Regrettably, he concentrated solely on the frameless boats of the Nile, continually attempting to link contemporary traditions with those of the Ancient Egyptians.

Hornell (1942, p. 2) refers to the frameless boats as "nuggar" and divides the vessels he recorded into two groups based on their practice or function, which he argues directly influences both the shape of the hull and the type of rigging. I focused predominantly on the latter part of the article in which he draws comparisons between the types of frameless boats he studied and what he terms "the Egyptian Tradition" of boatbuilding. This Egyptian tradition is evident in the distinctive upcurved bow and the use of two lateen sails on raked masts.

He included a brief glossary of vernacular terms used in various geographical areas that he studied (Hornell, 1942, pp. 30, 36). The final section of his article contains a comprehensive description of what he calls the "Aswan-Esna design." When comparing the terminology used by Hornell, recorded during the 1930s, with the work of Georges Colin from 1918 to 1920, I found that the terminology was consistent in both instances.

Another author who examined 20th-century boats in relation to ancient Egyptian ones was Somers Clark (1920, pp. 2–9). However, the distinction between Hornell and Clark is significant: while Hornell travelled and documented the traditional boatbuilding methods in the Middle Nile, Clark relied on his friend Walter Grabham of the Sudan Geological Service for all information pertaining to the boatbuilding traditions in Sudan (Clarke, 1920, p 5).

Both Clark and Hornell studied a type of Sudanese boat known locally as naggr, according to Clark, and nuggar, according to Hornell. The two authors attempted to compare this type of frameless Sudanese boat with the Dahshur boats discovered by De Morgan in 1894-95. A key difference between the two is that Clark placed greater emphasis on the hull shape and boatbuilding techniques used for the Dahshur boats, comparing them with the contemporary naggr. In

contrast, Hornell concentrated more on the hull shape, boatbuilding traditions, and rigging of the nuggar type boats as the focus of his research study.

2.3 Photographs of Egypt

During this part of the research, an extensive archive has been established, containing available photographs of boats on the Nile, dating from the 19th century to the present day. The archive has been compiled so far through internet-based research, where various photographic repositories have been visited and examined for images that meet the research criteria. Currently, the archive comprises more than three thousand photographs.

The photographs could be divided into the following categories:

1. **Supplementary:** Most books written by Western travellers over the past two centuries included several photographs, the majority of which depicted Ancient Egyptian monuments, along with occasional snapshots of a Nile boat or two.
2. **Professional Photographs:** During the 19th and 20th centuries, numerous professional photographers travelled to Egypt with the single aim of capturing the Orient. Hundreds of photographs were taken that embody the Egyptian culture of that era and reveal the mysteries of the ancients. Many images featured Nile boats in dynamic scenes, whether sailing, loading and unloading cargo, or simply capturing the river adorned with hundreds of boats sails.
3. **Personal Photographs:** Since the British invasion in 1882, soldiers, nurses, priests, and army commanders compiled their albums of the Orient. Private collections are currently being digitised and made available online by the grandchildren of their owners, which occasionally feature a photograph of a Nile boat or a scene on the Nile with boats in the vicinity background.
4. **Postcards:** A number of professional photograph collections have been transformed into postcards. Many personal postcard collections are being sold online, most featuring a particular scene on the Nile, and the majority were boats.

All four categories of photographs are employed in the research to illuminate various boat typologies, hull constructions, and rigging techniques evolution.

2.3.1 Invention of Photography

This research does not aim to discuss the various types and techniques of photography. However, it is essential to provide a brief historical introduction to photography, particularly noting that the

first photographs of Africa and the Middle East were captured in Egypt by Horace Vernet and Frédéric Goupil-Fesquet in 1839.

Between 1816 and 1826, the Niépce brothers began experimenting with light-sensitive materials to produce images. In 1826, Nicéphore Niépce created the world's first photograph using pewter plates in a camera obscura, with an exposure time of eight hours. In 1829, Jacques Louis Mandé Daguerre and Nicéphore Niépce entered into a partnership to refine photography. However, Niépce passed away in 1833, and Daguerre succeeded in perfecting the method of capturing images, which he called the Daguerreotype, announced to the public in 1839 (Koehler, 2015).

"To copy the millions of hieroglyphs that cover even the exterior of the great monuments of Thebes, Memphis, Karnak, and others would require decades of time and legions of draftsmen... By daguerreotype, one person would suffice." François Arago, January 7, 1839, during his announcement in Paris of the invention of photography by Louis-Jacques-Mandé Daguerre (Figure 14).

The first image captured on a Nile sailing boat was taken by the daguerreotypist Alphonse-Eugène-Jules Itier in 1845-6 (Figure 15). It seems the photograph was taken on a Nile cabin boat. The camera was affixed at the bow of the boat, facing towards the stern. Four crew members can be seen seated, with the cook positioned in the middle of the photograph, beside his modest kitchen. The silhouette of the captain/oarsman is visible atop the cabin, and the aft lateen sail is in the background.

The daguerreotype was not the most effective method for capturing images and fell out of use within a few years, particularly after a new process was discovered in 1845. The introduction of paper negatives made the process easier, faster, cheaper, and considerably lighter to carry; moreover, it became possible to produce multiple copies from the same negative paper. In 1849, Maxime Du Camp and Gustave Flaubert embarked on their extensive journey up the Nile to systematically photograph ancient Egyptian monuments. Employing the new photographic method known as "Calotype," Du Camp created the first photography-illustrated album that could be sold to the public (Brown, 2014, p. 1).

Between 1856 and 1858, Francis Frith embarked on a significant journey to Egypt, travelling up the Nile from Cairo to Abu Simbel. He took photographs along the entire route, utilising three different cameras. Before his return to England, he had already published his photographs with Negretti & Zambra, one of the principal photographic publishers in Great Britain. He documented his trips to Egypt in several photographic albums. He often photographed the same location multiple times, at times from two different angles (Figure 16, Figure 17). Additionally, he captured

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images from the same position during his various journeys (Figure 18). The most crucial photograph for this research was taken in Luxor in 1857; it depicts a boat mooring to the riverbank with numerous boatmen ascending the yard to furl the sail (Figure 19) (Frith, Van Haaften and White, 1980; Nickel and Frith, 2004; Lunn, 2005).

A French civil engineer, Félix Teynard, visited Egypt in 1851 to photograph the country's architectural structures. He sailed up the Nile, and in 1858, he published his album of 160 prints in one volume, entitled "Égypte et Nubie," which included several photographs of boats (The Paul Getty Museum 2018) (Figure 20).

2.3.2 Mass Production

The Middle East, particularly Egypt, was the first region subjected to visual surveys of its landscape, architecture, and people. Photographers such as Felix Bonfils, Antonio Beato, and Pascal Sebah found commercial success in the European market, emerging as suppliers of souvenir photographs for tourists in the Middle East; they even operated their own studios. Others, like the Zangaki Brothers, who travelled along the Nile between 1870 and 1890 with a horse-drawn darkroom wagon to document Egyptian scenery and events, sold their photographs to European tourists (Figure 21). Companies such as Underwood and Underwood specialised in stereoscopic prints and commissioned a photography mission to Egypt in the 1890s; the photographs were packaged in a boxed set that documented the life of 19th-century Egypt and its people (Figure 22) (AUC Special Collections, 2018; The Paul Getty Museum, 2018; Luminous-Lint, 2018).

2.3.3 The Kodak

In 1889, fifty years after Daguerre's invention, a New York company owned by George Eastman marketed the first commercial, transparent roll film alongside the camera named Kodak No. 1, making photography accessible to the public. The advent of smaller cameras that were both affordable and lightweight heralded a new era of photography, where the public could readily obtain photographs, resulting in a surge in the number of images taken in Egypt. In the early decades of the 20th century, soldiers across the globe had access to these compact and practical cameras, enabling them to document their daily lives in detail along both Middle Eastern and European frontiers. Many of these photographs have endured to the present day. With modern technology, it is now easy to digitise and even digitally restore these images. Several private and institutional archives have been established in recent years, housing these photographs. The majority of these archives are free to access and download.

2.3.4 The Legions' Memories

During WWI, by the end of 1914, soldiers were prohibited from taking photographs of their camps or activities, and official photographs were captured by Official War Photographers. A recent Lottery Funded project, "Views of an Antique Land" (Nicholson and Mills, 2017), has gathered approximately 2,000 photographs that were taken or acquired by British personnel serving in Egypt and Palestine, with the majority of images captured by the service personnel themselves. According to Nicholson and Mills (2017), soldiers made use of the Kodak Vest Pocket camera, which was introduced in 1912. A considerable number of photographs, including images of Nile boats, are available on the website; however, more photographs continue to be added to the archive (Figure 23).

During the Second World War, similar resources were available. The King's Own Royal Regiment Museum in Lancaster includes an archive featuring photo galleries of personnel photographs. Private Edward Wildman of the 2nd Battalion, King's Own Royal Lancaster Regiment, possesses one of the most extensive collections of Nile boat photographs. Another service member, a nurse named Joan Lockyer, wrote diaries, and her photographs and diaries are currently published. She had a small Brownie box camera that enabled her to capture numerous photographs of the Nile while she was stationed there Egypt.

In addition to the private albums and postcards of British and Allied service personnel, several official War Photographers traveled to Egypt to document the situation, particularly during the Second World War. Notable photographers included the American Alfred T. Palmer, who became the official photographer for the newly established Office of War Information (OWI) in 1941, and the Australian Frank Hurley, a photographer and filmmaker who, in 1911, was appointed as the official photographer for the Australasian Antarctic Expedition. During World War II, he served as the official photographer with the Australian Imperial Force in the Middle East. Hurley chose to remain in Egypt until 1946, producing documentary films for the British government. His photographic collection is one of the most valuable sources of information for this research, as it contains a wealth of Nile boat photographs taken in various locations throughout Egypt and Sudan (Figure 24, Figure 25).

In 1924, Lehnert & Landrock arrived in Alexandria and established a studio in Cairo, where Landrock sold Lehnert's photographs. The Lehnert & Landrock photography collection of Egypt is one of the most reproduced scenes in the country. The studio was sold to Kurt Lambelet in 1938 and continued operations, now known as the Lehnert and Landrock Bookshop and Gallery. Lehnert's original glass plates were discovered in the studio's storage and are now being reproduced on a large scale once more (Figure 26) (Geraci, 2003).

2.4 Discussion

After examining the literary and photographic resources available for this study, it became clear that the writings from the early 19th century contained notable gaps in the information provided about the Nile boats, including their shapes, types, and names. Conversely, the photographic sources offered an abundance of “pretty photographs” that lacked the boats as their focal point, instead featuring a contrasting object on the surface of the Nile.

Writers included descriptions of their boats, detailing the months they lived on them and their daily routines, as well as the routines and personalities of their boatmen. Prior to the advent of photography, authors attempted to sketch the scenes they encountered, either personally during their travels, by conveying descriptions to a painter upon their return, or with the assistance of a painter during their journeys. Some of these sketches were subsequently transformed into engravings, either wooden or metal, which were then included in the final publication, as illustrated in Figure 4.

It was not until Du Camp in 1849 that photographs began to be used as illustrations in Western travellers' books. Some writers had their own cameras, while others procured photographs from renowned studios either in Cairo or in their home countries. However, not all authors relied on photographs; for instance, Amelia Edwards (1877) engaged a painter, Mr. Percival Skelton, who created numerous watercolour drawings of the various monuments and scenes along the Nile. These paintings were then converted into black-and-white wood engravings and ultimately printed in the book. Andrew Szegedy-Maszak noted, “No matter how accurate, paintings, drawings, and prints are always acknowledged as interpretations shaped by the artist's hand and eye. A photograph, on the other hand, was initially perceived to provide a direct, unmediated slice of reality” (Lyons and J. Paul Getty Museum., 2005, p. 9; Koehler, 2015, p. 16). Many of Amelia's book engravings featured Nile boats. When compared to photographs of vessels from the same period, they were found to be inaccurate.

The amalgamation of written accounts and photographs would assist in more accurately identifying different typologies of boats, their uses, dimensions, and names. However, during the research process, another source appeared to be overlooked: the Egyptian archival resources. Numerous studies conducted over the past decades have primarily relied on Egyptian governmental archives. Several examinations of Egyptian government companies throughout the 19th and 20th centuries were undertaken by various researchers and archivists; however, Nile sailing boats were neglected. Although there is no coherent index of the possessions within the Egyptian archives, previously published studies indicate a potential source of new information, particularly since the registration of Nile navigation units was established in 1907 (‘Irāqī, 2002, p.

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152). From photographs taken during the first decade of the 19th century, all Nile boats displayed a registration number on their bows in both Arabic and English (Figure 27). Further investigation into this observation will be conducted in the future.

The next step of this research is to begin analysing the data extracted from the resources discussed in the previous chapters, which will contribute to the following chapter that aims to provide a better understanding of the boats within their environment and help trace the evolution of boat-building techniques.

2.5 Chapter Two Figures



Canja under Sail.

London Publish'd Dec: 1^o 1789. by G. Robinson & Co.

Figure 4: Bruce's boat with inscription "Canja undersail; London Publish'd Decr. 1st. 1789. by G. Robinson & Co." Bruce 1790 Vol I, pp. 43.

TABLEAU des Bâtimens naviguant sur le Nil, les Canaux, les Lacs, les Côtes maritimes de l'Égypte, et sur la Mer Rouge (1).

	NOMS DES BÂTIMENS EN		NOMBRE.	MÂTURE et VOILURE.	TIRANT D'EAU.	DIMENSIONS.		PORT EN		MOIS de NAVIGATION.
	ARABE.	FRANÇAIS.				LONGUEUR.	LARGESSE.	ARDES (2).	TONNEAUX.	
HAUTE ÉGYPTE.	Merkeb.	Grande kayasse.	10.	2 mâts.	7. 8.	54. 8.	18. 3.	1000.	200.	5.
	Felouka.	Kayasse (3).	50.	id.	7. 0.	50. 6.	16. 6.	800.	160.	5.
	Nousf-felouka.	Demi-kayasse.	500.	Voile latine.	6. 0.	47. 8.	15. 4.	500.	100.	7.
	Felouka-sougayar.	Petite kayasse.	600.	id.	4. 6.	37. 0.	10. 0.	200.	40.	9.
		Les plus petites.	300.	1 mât. à v. lat. (4).	1. 6.	19. 0.	7. 0.	30.	6.	12.
	TOTAL.	1460.								
BASSE ÉGYPTE.	Kangeh-kebyr.	Grande mâch (4).	50.	Voile latine.	4. 6.	50. 6.	13. 9.	300.	60.	7.
	Nousf-kangeh.	Demi-mâch.	50.	2 mâts.	3. 10.	43. 9.	12. 6.	150.	30.	10.
	Kangeh-sougayar.	Kanje (5).	60.	1 mât à v. lat. (4).	1. 6.	40. 6.	5. 0.	40.	8.	12.
	Kebyr-kayasse.	Grande kayasse.	600.	2 mâts.	4. 0.	48. 0.	13. 0.	300.	60.	8.
	Nousf-kayasse.	Demi-kayasse.	800.	idem.	3. 2.	39. 0.	11. 6.	150.	30.	10 1/2.
	Kayasse-sougayar.	Petite kayasse.	1000.	1 mât à v. lat. (4).	1. 6.	19. 0.	7. 0.	30.	6.	12.
	TOTAL.	2560.								
CÔTES MARI.	Chaityeh.	Grande djermé (6). . . . .	.	.	.	.	.	.	.	.
	Mahoune.	Petite djermé. . . . .	.	.	.	.	.	.	.	.
	Karavelle.	Caravelle. . . . .	.	.	.	.	.	.	.	.
MER ROUGE.	Kayasse.	Kayasse. . . . .	.	3 mâts. . . . .	.	.	.	.	.	.
	Zaïme.	Zaïme (7).	30 à 40.	.	10 à 12.	.	.	2000 fardes (9).	400.	.
	Karavelle.	Caravelle (8).	12 à 15.	3 mâts.	20.	160.	50.	.	1200.	.

(1) Les données qui manquent dans ce tableau, ont été perdues dans notre correspondance avec M. Le Roy, préfet maritime, qui nous les avoit adressées.

(2) L'ardèh de grain varie de poids, dans les différentes villes de l'Égypte; il est de 340 à 430 livres, poids de marc.

(3) Le tirant d'eau des bâtimens, tant de la haute que de la basse Égypte, est estimé à plein chargement.

(4) Sous le titre de *kayasse*, les habitans comprennent encore les barques du port de 300 et de 400 ardes: il n'a pas été possible de distinguer plus qu'on ne l'a fait dans ce tableau, les différentes espèces de ces bâtimens. On nomme encore *kayasse*, tout bâtiment qui n'a pas de chambre.

(5) Les *mâch* sont des bâtimens du Nil, dont la voile latine, d'une ampleur considérable, est fixée à des antennes de 80 à 90 pieds de longueur; ces antennes, fixées elles-mêmes au haut des mâts, ne permettent que très-difficilement leurs manœuvres, en sorte que, dans les nombreuses bordées auxquelles obligent les sinuosités du fleuve pour prendre le vent, les voiles se trouvent appliquées contre les mâts, sans qu'on puisse les couper ni les amener: aussi, dans les rafales, voit-on fréquemment sur le Nil chavirer quelques-uns de ces bâtimens.

(6) *Kanje*, espèce de canot ou chaloupe de forme très-fine, et sans chambre.

(7) Les *djermes* sont des bâtimens propres à la navigation des

côtes maritimes de l'Égypte, et servent au cabotage des villes d'Alexandrie, de Rosette et de Damiette. Leur forme longue de 50, 60 et 70 pieds, est très-éfilée, et en rend la marche très-vite. Ces djermes ont deux et trois mâts avec de grandes voiles latines, dont les antennes, fixées au haut de chaque mât, comme dans les mâch, ne peuvent amener; ce qui force les matelots à y monter pour serrer les voiles. Ces bâtimens, de quatre à cinq pieds de tirant d'eau, ne sont pas pontés: outre ce défaut, qui expose les marchandises à être mouillées ou avariées dans les gros temps et dans la saison des pluies, ils ont celui d'être sujets à chavirer par l'ampleur même des voiles.

(8) Les *zaimes*, bâtimens de la mer Rouge, vont prendre à Mokhâ les cafés et produits de l'Arabie; ils en rapportent à Soucy les marchandises du Bengale, transportées par les Arabes Baniens; ces bâtimens font deux voyages par an; ils sont mal armés, et ont ordinairement trente à quarante hommes d'équipage.

(9) Les *karavelles* (espèce de frégates Turques, du port de 200 tonneaux) sont armées de 40 à 60 canons; elles ont 200 hommes d'équipage, et reçoivent, en outre, 400 passagers qui font le pèlerinage de la Mekke: ces bâtimens, remplacés aujourd'hui par les zaïmes, ne faisoient qu'un seul voyage par an.

(10) La *firde* de café-mokhâ et des ports de l'Yemen pèse quatre quintaux environ; c'est une balle faite en feuilles de dattier.

Figure 5: Classification of Egyptian boats including the Nile. Jomard, 1809: 123.



Figure 6: View of the First Cataract, Photograph by Maxim Du Camp 1849-50. Metropolitan Museum. OA – Public Domain.

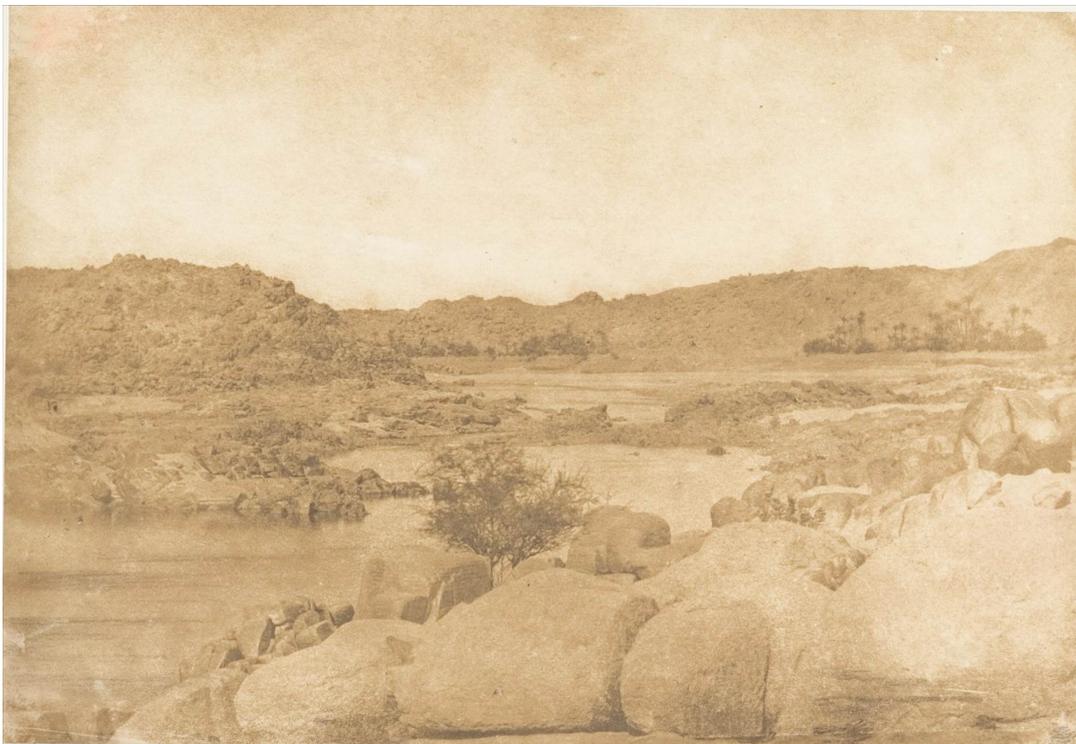


Figure 7: View of the First Cataract, Photograph by Maxim Du Camp 1849-50. Metropolitan Museum. OA – Public Domain.

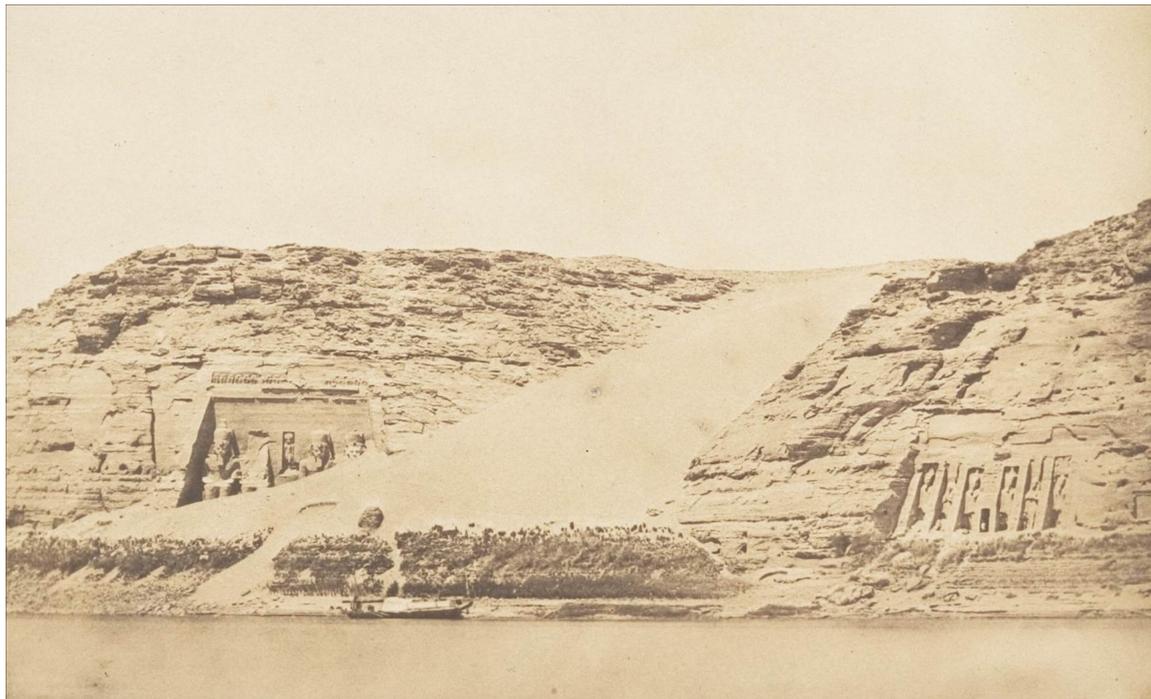


Figure 8: Photograph by Maxime du Camp 1850 with a view of the two Abu Simble temples.

Metropolitan Museum. OA – Public Domain.

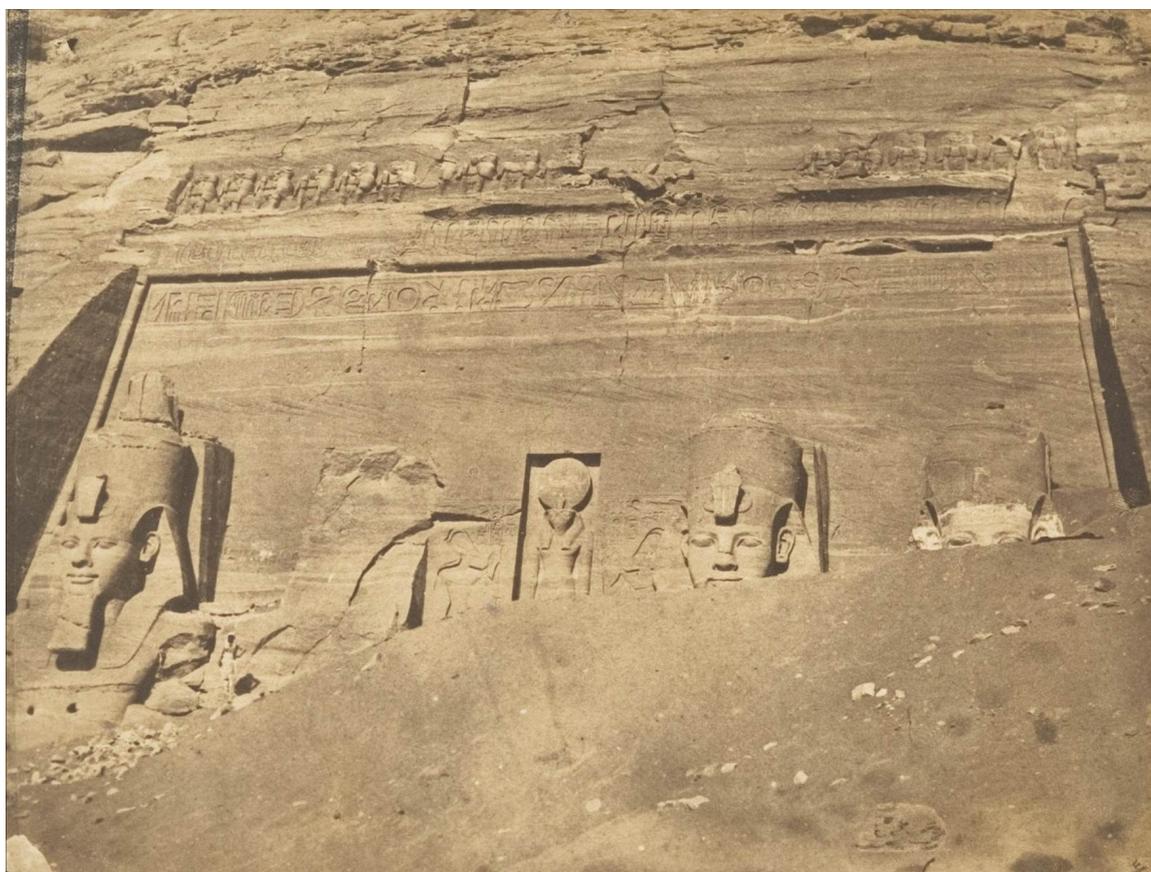


Figure 9: Photograph by Maxime du Camp 1850 with a view of the big Temple of Abu Simble

partially covered with sand. Metropolitan Museum. OA – Public Domain.

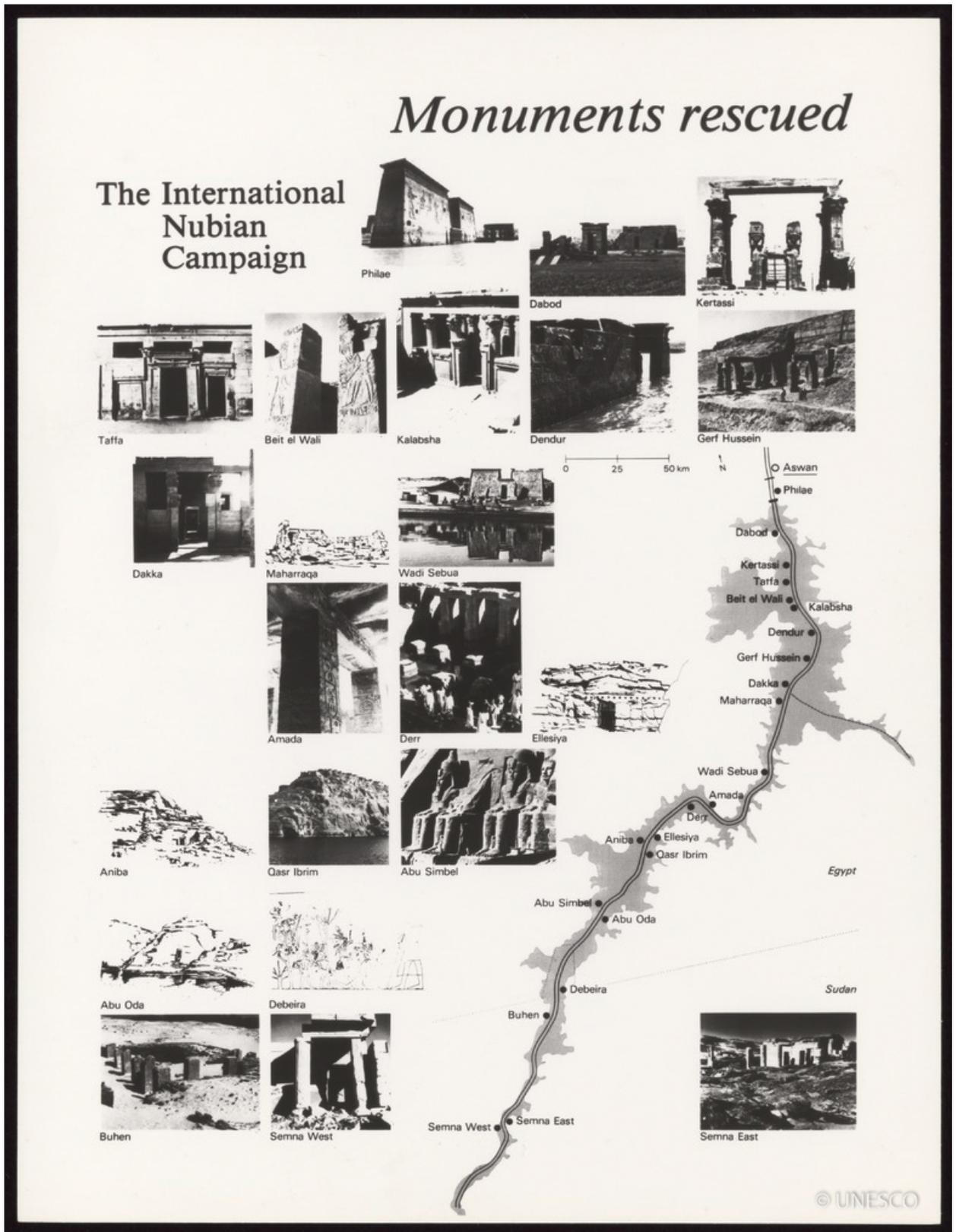


Figure 10: Nubian Temples that were recorded and saved during the UNESCO Nubia Campaign.



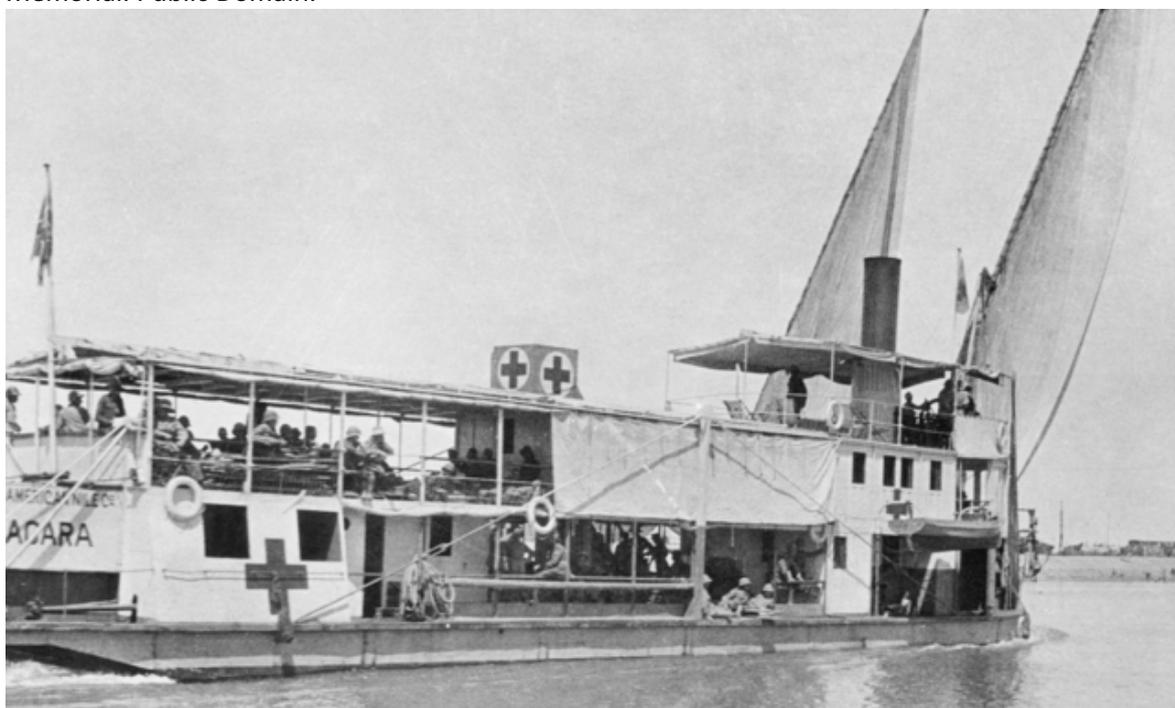
Figure 11: Rock of Abusir, photograph by Maxime du Camp 1850. Metropolitan Museum. OA – Public Domain.



AUSTRALIAN WAR MEMORIAL

A02208

Figure 12: One of Anglo American Nile steam boats, the Niagara, which has been fitted out as a hospital boat on Freshwater Canal, passing Tel el Kebir, en route to Mesopotamia. Australian War Memorial. Public Domain.



AUSTRALIAN WAR MEMORIAL

H00724

Figure 13: The hospital ship Niagara on the Suez Canal at Kantara. The ship was requisitioned from the Anglo American Nile Company and put into service as a hospital ship by the Allied medical authorities. Australian War Memorial. Public Domain.

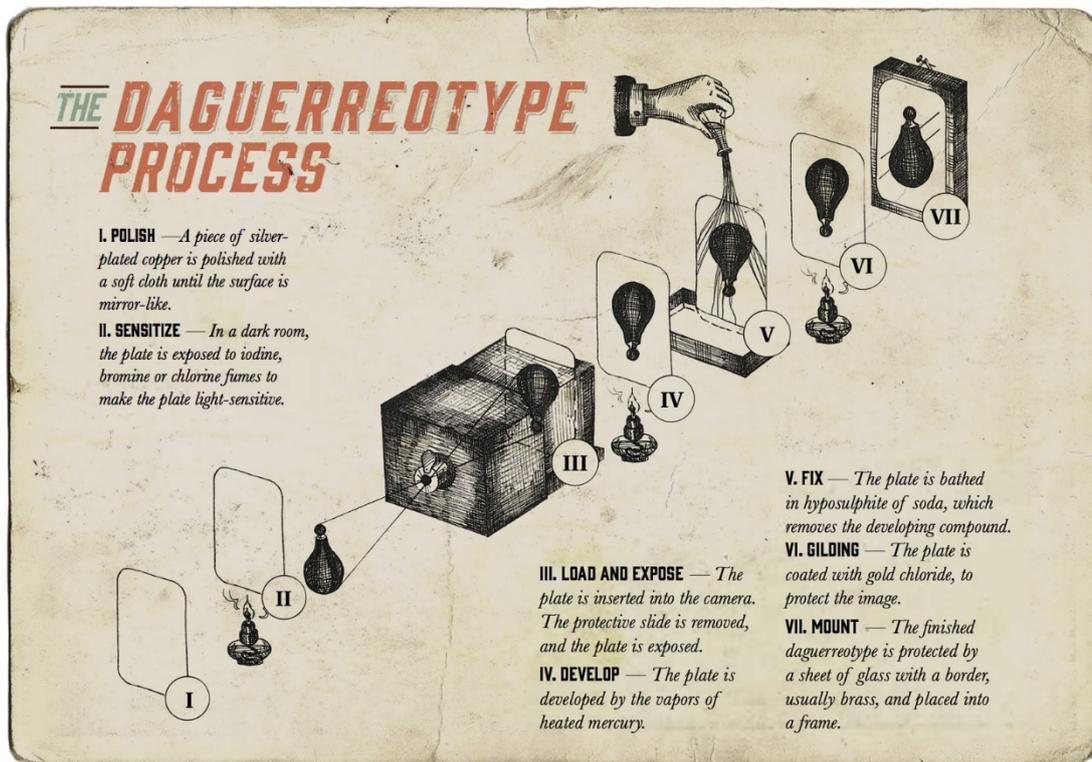


Figure 14: The Daguerreotype Process. Source: Aramco World. George Eastman house international museum of photography and film.



Figure 15: Monsieur Itier's Cange Under Sail on the Nile 1845-46 by Alphonse-Eugène-Jules Itier. Metropolitan Museum. OA – Public Domain.



Figure 16: Pharaohs Bed, Island of Philæ. Photograph by Francis Frith 1857. The Paul Getty Museum. Creative Commons License.



Figure 17: The Kiosk of Trajan, Philae. Photograph by Francis Frith 1858. The Paul Getty Museum. Creative Commons License.



Figure 18: Le Temple hypethre sur l'île de Philae. Stereoscopic Photograph by Francis Frith 1856–1857. The Paul Getty Museum. Creative Commons License.



Figure 19: The Landing Place, Luxor, Thebes. Photograph by Francis Frith 1857. The Paul Getty Museum. Creative Commons License.



Figure 20: Louksor. Petit Bras du Nil - Barque de Voyageurs. Félix Teynard, negative 1851–1852; print 1853. The Paul Getty Museum. Creative Commons License.



Figure 21: Ouverture de Qasr al Nil. Photograph by The Zangaki Brothers about 1880–1890. The Paul Getty Museum. Creative Commons License.

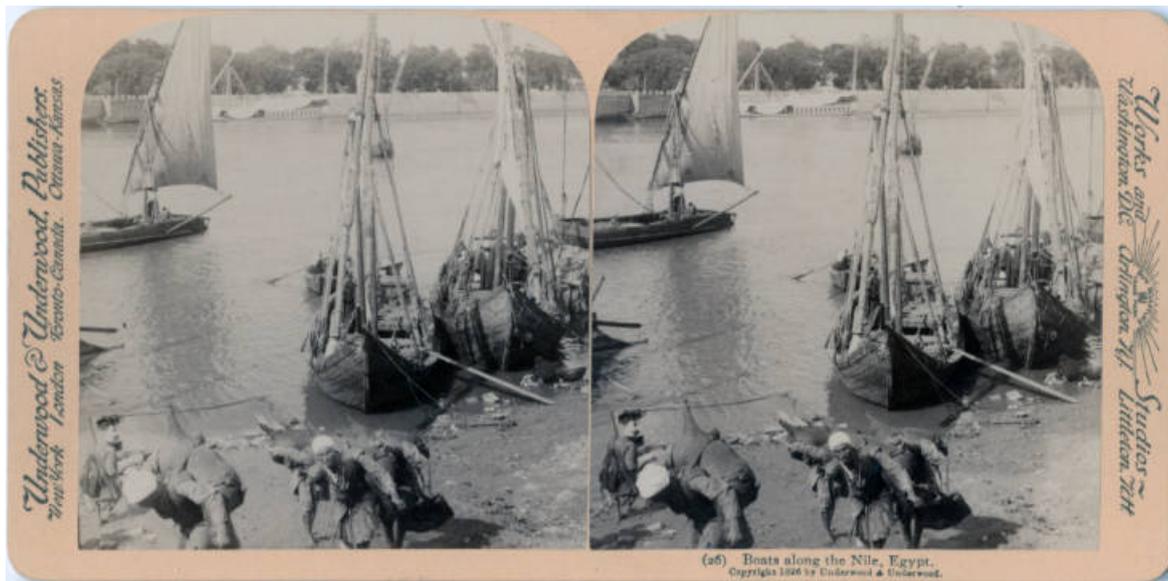


Figure 22: Boats along the Nile, Egypt. A stereoscopic card by Underwood and Underwood 1896. American University in Cairo Rare Books and Special Collections Library. All rights reserved.



Figure 23: A Felluca on the Nile, opposite Bulaq. Sept 1917. Photograph by Herbert Standen. Views of an Antique Land. CC BY-NC 4.0



Figure 24: Feluccas on the "Sweetwater" Canal Ismalia, Stereo Photograph by Frank Hurley between 1939 and 1945. National Library of Australia. Public Domain.



Figure 25: Bluff-nosed feluccas, Photograph by Frank Hurley between 1939 and 1945. National Library of Australia. Public Domain.



Figure 26: Close to Cairo - Feluccas along the Nile 1924-1930. Source: Dr Edouard Lambelet, Landrock's grandson and current owner of the celebrated Lehnert and Landrock bookshop in downtown Cairo – through Ahram Online. All Rights reserved.



Figure 27: Old Cairo port, photographed by Frank Hurley between 1939 and 1945. Shows registration numbers on the bow, along with a mark in Arabic and in English numbers. National Library of Australia. Public Domain.

Chapter 3 Data Sources and Methodology

In the pursuit of understanding Nile sailboats, my research design is framed within a mixed approach that utilises both qualitative and quantitative methodologies, integrating literary sources and visual data. The overall strategy involves a comprehensive examination of the historical and cultural aspects related to these boats. Literary sources constitute a fundamental component of my research, focusing on texts that range from historical documents to cultural studies. The selection criteria for these sources include relevance to Nile sailboats, historical significance, and cultural context. The process involves identifying and accessing pertinent literature to derive insights into the historical and cultural dimensions of the Nile sailboats.

Photographs, as visual data, offer a unique perspective that complements literary sources. These images serve as visual artefacts, capturing the essence of Nile sailboats across various periods. The criteria for selecting photographs consider factors such as the time period, regional variations, and the specific type of boat. One critical aspect of this process is availability. As will be discussed further in this chapter, over 80% of all photographic sources are found in online archives and databases. Obtaining a diverse yet representative sample of visual data has been a key consideration throughout the research process.

Data analysis is a crucial phase that involves interpreting information from both literary sources and photographs. Literary sources undergo thematic analysis to identify patterns, historical developments, and cultural nuances. Visual data analysis focuses on examining boat design, changes in rigging, and contextual details depicted in the photographs. The integration of findings from both literary and visual data contributes to a comprehensive understanding of Nile sailboats, enabling a richer exploration of their historical and cultural significance.

While the research methodology strives for comprehensiveness, it is essential to acknowledge its limitations. Potential biases in literary sources, constraints in the availability of photographs, and the inherent subjectivity of interpretation are among the recognised limitations. Through this approach, the methodology aims to provide transparency, rigor, and a robust foundation for the exploration of the Nile sailboats.

3.1.1 Examination of literature and photographs

- 1- The initial phase of the research involved a comprehensive collection and examination of literary and photographic resources. In analysing the literary landscape, a diverse range of sources was considered to provide a deeper understanding of Nile sailboats. The literary resources included:

- 2- Modern History of Egypt: Exploring the historical developments of Egypt in the modern era provided valuable insights into the socio-political context in which Nile sailboats evolved.
- 3- Economic and Social Changes in Egypt (19th - 21st Centuries): A focus on economic and social transformations over a significant period aimed to illuminate the contextual shifts influencing Nile sailboats.
- 4- Geological, Hydrological, and Historical Studies of the Nile River: Understanding the Nile's geological and hydrological features, along with historical perspectives, contributed to a holistic view of the environmental factors affecting boats development.
- 5- Travellers' Writings: Insights from the observations and experiences of travellers offer a qualitative lens into the cultural and practical aspects of Nile sailboats.
- 6- Studies of the Typology of Ancient Boats and Ships: Exploring the typology of ancient boats provides a historical foundation, offering parallels and contrasts with contemporary Nile sailboats.
- 7- Studies of Ancient Shipbuilding Traditions: Investigating ancient shipbuilding traditions facilitates an understanding of the craftsmanship and techniques employed in constructing Nile boats.
- 8- Evolution of Tourism: Examining the evolution of tourism provides a socio-cultural context, shedding light on the impact of external influences on Nile sailboats.
- 9- Orientalism and the Change of Traditions: A study of Orientalism and changing traditions explores cultural shifts, considering how external perceptions influence the development of boat traditions.
- 10- Lexicons of Arabic Terminologies: The linguistic dimension is addressed through the exploration of Arabic terminologies, with lexicons spanning Arabic, English, and French. English and French lexicons primarily originate from the 19th century, aligning with the study period, while Arabic lexicons draw from classical and medieval resources, occasionally referencing Western lexicons for additional information.
- 11- Ethnographic Studies of Nile Boats in Egypt and Sudan: Ethnographic studies provide an anthropological lens, allowing for a nuanced understanding of the practical usage and cultural significance of Nile boats in both Egypt and Sudan.

This meticulous examination of literary resources laid the foundation for a comprehensive exploration of Nile sailboats, ensuring a nuanced understanding of their historical, cultural, and linguistic dimensions.

3.1.2 Satellite/desk-based research

During the first six months of the research, the scope and timeline of the study were modified. The original proposal aimed to track and examine various contemporary maritime traditions in Egypt, with a focus on boat building and sailing practices within small maritime communities throughout the country. However, after the preliminary resource review phase, it became evident that the research would benefit from concentrating on a single area, allowing for a more in-depth analysis of the subject. Consequently, the research was refined to focus on boats within the main body of the Nile River (between Cairo and Aswan). The main body of the Nile forms a complete navigational unit, distinct from the Nile Delta and the Northern Lakes. Additionally, the research is time-constrained, as the three-year duration of the study does not permit a comparative analysis of the three different navigational units or zones. Following the change in the study's scope, the next step was to select the available case studies. Several areas of interest had already been identified during my MA research, Morsy (2016), which included three different sites where small riverine communities resided on or around traditional sailing practices boats.

However, a systematic satellite imagery survey of the Nile main body was conducted during March 2017, using Google Earth Pro. The aim of this survey was:

1. Familiarization of the study area.
2. Identification of potential targets (boats)
3. Identification of potential sites (Boat yards, Shipyards)
4. Identification of concentration zones of boats.

3.1.3 First Fieldwork

A second step involved visiting the targets to further assist their potential for future research. A Google Earth map was utilised to identify the targeted areas, where the concentration of boats or boat yards is evident (Figure 28; Figure 29). The targets are an estimated number based on the Google Earth maps (Figure 30). Some targets are located within a 1 km radius of each other. The targets were refined during the fieldwork.

Fieldwork Plan:

- Driving from Alexandria To Luxor.
- Nile Cruise between Luxor and Aswan.
- Aswan/Nubia scouting. (4 targets)
- Aswan – Edfu. (7 targets)
- Edfu – Luxor. (18 target)
- Luxor. (11 target)
- Luxor – Qena. (6 targets)
- Qena - Nagaa Hammadi. (8 targets)
- Nagaa Hammadi – Sohag. (3 targets)
- Sohag – Asyut. (9 targets)
- Asyut – Minya. (4 targets)
- Minya – Beni Suef. (13 Targets)
- Beni Suef – Cairo. (8 targets)

Total Targets 91

Of the 91 targets, only 31 were selected for further investigation and research. A detailed description of each target can be found in Appendix A. The primary outcome of the first fieldwork was the absence of any wooden sailboats on the Nile; all the examined vessels were constructed with iron hulls, regardless of their shape or size (Figure 31; Figure 32). In a friendly conversation with one of the boatyard owners, he mentioned that wooden sailboats on the Nile have not been used for at least 40 years (Figure 33; Figure 34).

The findings from the first fieldwork led to a revision of the research questions and scope. The focus of the research shifted to exploring the aspects that contributed to the change in boat building materials and methods. Consequently, an in-depth examination of the literary resources was required to better understand the various influencing factors that transformed boatbuilding traditions on the Nile during the 19th and 20th centuries.

3.1.4 Modified Methodology

After the second progression review mandated by the University of Southampton, the examination committee advised the researcher to revise the original research plan, consequently altering the methodology from ethnographic to archival-based research.

3.1.4.1 The Thomas Cook Archive

The research included an online search of all available resources. The reason for conducting online archival research is that there appears to be no single archival source holding all the information the researcher needed for this study. Therefore, it was more effective to seek out online archival sources to evaluate their viability in terms of documents and photographs related to Nile boats and Egypt's Nile navigation.

The first archival source was recommended to me by Mr. Andrew Humphreys, the author of "On the Nile: In the Golden Age of Travel." I met Mr. Humphreys at the British Library in London, and after our discussion, he advised that I should consult the Thomas Cook Archive. The Thomas Cook Archive is held at the TC headquarters in Peterborough. The researcher managed to secure an appointment with Mr. Paul Smith from the Thomas Cook archives on 27th September 2017. The full inventory of the archive, which pertains to Egypt, can be found in Appendix B.

During the visit, Mr. Smith assisted the researcher in locating and examining all photographic and archival records of the Thomas Cook and Son company in Egypt, including its long history with the tourism industry and its relationships with both British and Egyptian royalty, which provided a distinct advantage in monopolising riverine transportation in Egypt. As discussed earlier in Chapter Two, Thomas Cook began his activities in Egypt in the 1860s, and it was not until 1959 that Thomas Cook and Son Ltd was sold, after which the company no longer had headquarters in Egypt following nearly 90 years of operation years.

The visit to the Thomas Cook archive proved very fruitful, as there was potential to draw theories supported by physical evidence regarding the changes in Nile boat manufacture and use in Egypt during the 19th and 20th centuries. However, studying all the archival materials available at TC would require a considerable amount of time and dedicated research of its own. The gradual closure of the company has made it increasingly difficult for researchers to access the archive. By 2019, it became completely unattainable when TC decided to terminate the services of the only archives, effectively preventing any access to information. Nevertheless, some of the data gathered during the visit is utilised in the research.

After visiting the Thomas Cook Archive, I entered another phase of researching all the available archives containing photographs of Nile boats. Internationally, archives, universities, museums, and private collectors have digitised their collections and made them accessible online. This has greatly benefited researchers, making it much easier to search the internet for online resources rather than relying solely on physical archives.

3.1.4.2 Nile boat Photograph research

The main issue with searching online for photographs of Nile boats is that the boats themselves were not of interest to the archivist or whoever created the database. It was deemed more important to include geographical locations, such as "Cairo, Luxor, etc.," and/or significant landmarks, such as "the Pyramids, Luxor Temple, etc." Although Nile boats were essential in all photographs of Egypt, they were seldom noted in the photo descriptions, making it difficult for researchers to locate the desired images. This resulted in a time-consuming process of visually verifying every photograph among the 112 archives consulted during this research period. A full list of the archives and links to their websites, if available, can be found in Appendix C.

The research included the use of the following keywords:

1. Nile Boats
2. Boat
3. Nile Boat
4. Egypt Boats
5. Cargo boats
6. Sailboat
7. Sailboats
8. Nile
9. Nile sail
10. Egypt

Each keyword yielded different results; for instance, the Library of Congress. The LOC website features a total of 467 digital collections (Figure 35), while the Prints and Photographs Online Catalogue (PPOC) contains 70 collections and archives (Figure 36). As stated on their website, the PPOC includes records of 90% of the total holdings of the LOC.

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When researching the term "Nile Boat," the search engine returned 66 results, including groups of photographs. However, using the term "Nile" yielded a significantly greater number of results for photographs of Nile boats than the more specific term. Among the various search queries, the total count of photographs featuring boats and ships on the Nile River in both Egypt and Sudan amounted to 112 (Figure 37).

Thus, I employed the same keywords and research terms across various search engines, archival resources, and social media to obtain comparable results. This led to a total of 3,965 photographs of the Nile, which includes 1,712 images of different Nile boats. I utilised this database of photographs to highlight various hull shapes of Nile boats. Furthermore, I successfully traced the evolution of rigging during the 19th and 20th centuries. A total of 100 images were selected to be included in this thesis to represent the entire collection, along with full cataloguing details, tags, and metadata. To better analyse the research results, I divided the "Nile Boats Photo Archive" into four categories: digital archives, personal archives, social media, and others. All photographs were downloaded from the different archives and saved on the University of Southampton OneDrive account.

3.1.4.2.1 Digital Archives

Within the realm of digital archives, a vital component of the research methodology, there exist a total of 72 distinct repositories that have significantly contributed to the retrieval of Nile boat photographs. This encompassing category includes various sources, each offering a unique perspective and compilation of visuals data.

1. Museum Websites and Archives:

Among the prominent contributors in this category are esteemed institutions such as the British Museum and the Hallwyl Museum. These repositories house a wealth of visual materials, offering insights into the historical and cultural aspects of Nile sailboats through their extensive collections.

2. Stock Images Websites:

Stock image websites have proven to be valuable resources for sourcing diverse visual content. Notable platforms such as Alinari, AKG Images, and Getty Images have played a pivotal role in augmenting the visual database. Their extensive libraries provide a broad spectrum of Nile boat photographs, capturing various aspects of their design, usage, and cultural significance.

3. Universities Libraries and Archives:

Academic Institutions, such as Cornell University, the University of Pennsylvania, and the University of Wisconsin Milwaukee, have made significant contributions to the digital archive category. These university libraries and archives function as repositories for scholarly works, historical documents, and visual materials pertaining to Nile sailboats.

4. Public and National Libraries:

Esteemed public and national libraries have played a crucial role in expanding the variety of visual resources available. The Library of Congress, the National Library of Australia, and the National Library of France serve as pillars in this regard, providing a diverse array of photographs that capture the essence of the Nile boat culture.

5. Photographic Archive Projects:

Specialised projects centred on photographic archiving have also enriched the digital archives. Akkasah, the Albert Khan Collection, and the Arab Image Foundation represent initiatives committed to preserving and showcasing visual heritage. These projects provide a nuanced understanding of Nile sailboats through thoughtfully curated visual narratives. In summary, the exploration of digital archives within the research methodology involves a meticulous examination of 72 distinct repositories. Ranging from esteemed museums and universities to stock image websites and specialised projects, each source contributes uniquely to the research project, enhancing its richness and depth findings.

3.1.4.2.2 Personal Archives

In the realm of personal archives, the researcher broadened the scope of visual resources by establishing direct connections with the owners of photographs and collectors who specialise in vintage and antique images. These personal archives provide a distinct and often unique perspective on Nile boats, fostering an intimate connection with the collectors and contributors who generously shared their private collections or those of their family members. This personalised approach adds depth to the research, capturing not only the visual essence of Nile sailboats but also the individual stories and contexts surrounding them images.

3.1.4.2.3 Social Media

The dynamic landscape of social media, particularly on platforms like Facebook and Twitter, has emerged as a robust source of visual content. Numerous groups, pages, and hashtags dedicated to Nile boats have facilitated the circulation of hundreds of photographs. While many of these

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images may overlap with those found in other archive categories, the social media aspect introduces an element of community engagement. These platforms serve not only as repositories of visual data but also as spaces for information exchange. Despite potential duplications, the richness of insights and additional perspectives gained from these social media communities contributes meaningfully to the overall narrative of Nile sailboats. The downside of this source of photographs lies in the accuracy of dating and the credible information regarding their origin's.

3.1.4.2.4 Others

The "Others" category encompasses a diverse array of visual materials gathered through various channels. A significant source is the visit to the Thomas Cook Archive, where photographs and scans were acquired, adding a historical and contextual layer to the visual database. Additionally, field visits produced a collection of photographs capturing contemporary scenes of Nile boats in their natural environment. Furthermore, the researcher's personal collection of Magic Lantern Slides, consisting of 20 slides featuring Nile boats, has proven to be a unique and valuable resource. These slides, once used as educational tools in the 19th and 20th centuries, provide a glimpse into how Nile sailboats were presented and interpreted by travellers and scholars during that period. This category enriches the visual exploration, incorporating historical artefacts and contemporary observations into a broader understanding of the Nile sailboats.

3.2 Chapter Three Figures



Figure 28: Potential Targets of Cabin boats from Google Earth.



Figure 29: Cargo Boat from Google Earth image.



Figure 30: Map of targeted areas.



Figure 31: Cargo boat that was identified using Google Earth in Figure 29 as a small village called Elmasandah, 30 km Southern of Cairo. Photograph by the researcher.



Figure 32: Group of Leisure boats that was identified using Google Earth in Figure 30 as a small village near Esna in upper Egypt. Photograph by the researcher.



Figure 33: A brief drive by to a local boat yard between Luxor and Aswan, Metal hull cargo boat appears in the background being fitted and converted in to Leisure boat. Photograph by Mai Ghanem.



Figure 34: A new metal hull Dahabeyah being built at the boat yard. Photograph by Mai Ghanem.

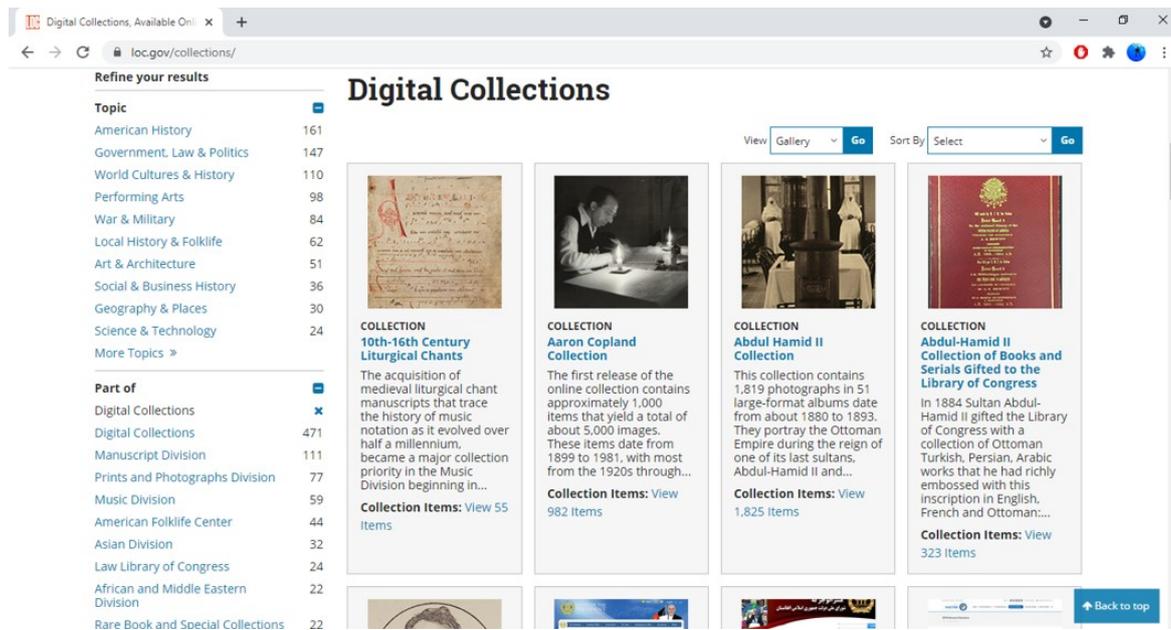


Figure 35: Screenshot from the Library of Congress web archive showing the Digital Collection.

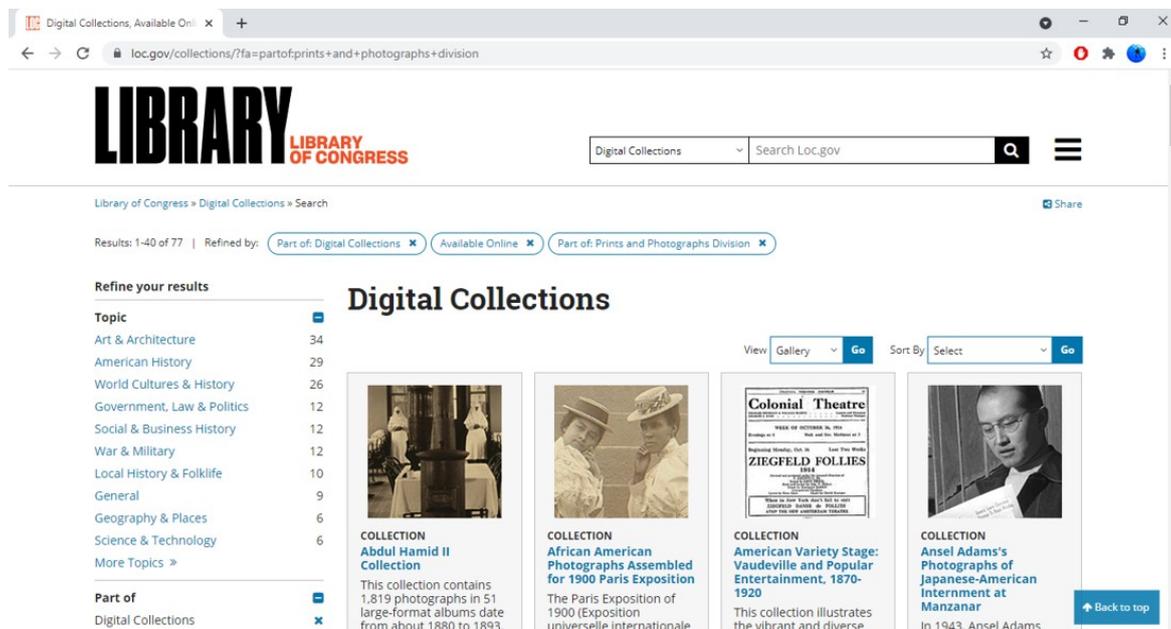


Figure 36: Screenshot from the Library of Congress web archive showing the Digital Collection.

The screenshot shows a search results page from the Library of Congress web archive. The browser address bar displays the URL: `loc.gov/photos/?c=150&fa=online-format:image%7Caccess-restricted:false%7Csubject:egypt&q=Nile&sp=1&st=list`. The page title is "FORMAT Photo, Print, Drawing". Below the title, there are two tabs: "Search Photos, Prints, Drawings" (selected) and "Collections with Photos, Prints, Drawings".

The search results are refined by several criteria, shown as buttons at the top: "Original Format: Photo, Print, Drawing", "Available Online", "Online Format: Image", "Access Condition: Available Online", and "Subject: Egypt".

On the left side, there is a "Refine your results" section with the following filters and counts:

- Available Online:** 224
- All Items:** 224
- Original Format:**
 - Photo, Print, Drawing: 224
- Online Format:**
 - Image: 224
- Date:**
 - 1900 to 1999: 147
 - 1800 to 1899: 77
 - 1700 to 1799: 1
- Location:**
 - Egypt: 223
 - Cairo: 56
 - Nile River: 20

The main search results area is titled "Search Photos, Prints, Drawings". It includes a "View" dropdown set to "List" and a "Sort By" dropdown set to "Relevance". The results list includes:

- PHOTO, PRINT, DRAWING Nile?**
1 transparency : glass : 5 x 7 in.
Date: 1898
- PHOTO, PRINT, DRAWING Nile [Egypt]**
1 transparency : glass : 5 x 7 in.
Date: 1898
- PHOTO, PRINT, DRAWING Nile & pyramids**

A "Back to top" button is located at the bottom right of the results area.

Figure 37: Screenshot from the Library of Congress web archive showing the redefined searches and parameters.

Chapter 4 Geographical and Historical Context

4.1 Introduction.

Exploring the intricate world of Nile boats requires a holistic understanding that goes beyond the vessels themselves. The geographical and historical context in which these boats operated acts as a vital backdrop, shaping their role in the region's economic evolution. In this chapter, I do not intend to provide a comprehensive historical account of Modern Egypt but rather to illuminate the contextual stage where Nile boats emerged as pivotal players in the nation's economy trajectory.

This chapter embarks on a historical journey, covering the period from the French Occupation in 1798 to contemporary Egypt. I have chosen to exclude the history of Mamluk and Ottoman Egypt to maintain the focused scope of this study. However, relevant insights from sources dating back to the Mamluk era will be integrated. The narrative begins with the French Occupation under Bonaparte, laying an early foundation for the exploration that follows.

The historical narrative unfolds with a deliberate emphasis on elements directly impacting boats—such as commerce, trade routes, significant maritime or economic reforms, and the natural environment. Within this exploration, attention is devoted to discerning insights into boatbuilding materials and fluctuations in the natural course of the Nile, all of which profoundly influenced the evolution of Nile boats.

Concurrently, recognising the inseparable relationship between boats and their natural habitat, a dedicated section within this chapter explores the geography of the Nile. This section highlights the evolution and alterations of the Nile's course, providing essential insights into the environmental factors that shaped boat design and functionality. Lastly, a detailed discussion unfolds on major irrigation and water control projects, revealing their impact on the navigability and ecological dynamics of the Nile.

By intricately weaving together the geographical and historical dimensions, this chapter endeavours to contextualise Nile boats within a broader narrative of Egypt's history and environmental evolution. This multifaceted exploration aims to uncover the interconnected factors that have shaped the unique and enduring relationship between Nile boats and the geographical and historical tapestry of the region.

4.2 Geography

It is well known that the Nile has always served as the artery of life for Egypt, acting as a highway for internal trade and transportation while linking the products of its hinterland to the international ports on the Red Sea and the Mediterranean.

The Nile is the longest river in Africa (Olson *et al.*, 2024), flowing north through northeast Africa before reaching the Mediterranean Sea. It traverses Tanzania, Uganda, Rwanda, Burundi, the Congo, Kenya, Ethiopia, Eritrea, South Sudan, Sudan, and Egypt. With a length of approximately 6,825 kilometres, it holds the title of the longest river in the world. Interestingly, it is the only river that flows from south to north (al-Manāwī, 1966, p. 19).

The name "Nile" derives from the Greek "Neilos" (Latin: Nilus), likely stemming from the Semitic word "naḥal," which means a valley or river valley and, by extension, a river (al-Manāwī, 1966, p. 19).

The Nile consists of three main parts: the White Nile, the Blue Nile, and the Atbara. Its source is considered to be Lake Victoria, situated in Tanzania, Uganda, and a small portion of Kenya. The section from Lake Victoria to Khartoum is referred to as the White Nile. It is larger than the Blue Nile, which merges at Khartoum with the water flowing from Lake Tana in Ethiopia (Woodward *et al.*, 2008, p. 275). As the White Nile flows north to Khartoum, it undergoes significant changes. Despite being larger than the Blue Nile, it contributes only 15% to 25% of the Nile's total flow due to losses along its course. In contrast, the Blue Nile, originating in Ethiopia, accounts for a greater share, contributing between 75% and 85% to the flow that ultimately reaches Egypt and enters the Mediterranean Sea (Woodward *et al.*, 2008, p. 275).

The Nile has profoundly shaped life in Egypt throughout its history, serving as the primary water source for most Egyptians living along its banks. The river supplied vital resources such as water, food, and fertile soil for agriculture, impacting two key facets of Egyptian civilisation—agriculture and transportation (Hassan, 1997). The Nile's annual flood regime, marked by a consistent flooding period from June to September, was a predictable and advantageous phenomenon for the people, enabling them to harness its resources (Mays, 2008, p. 471).

In Egypt, only about 1,536 kilometres of the Nile's total length of 6,825 kilometres flow through the country, with an average width of 750 metres (Ibrāhīm *et al.*, 1994, pp. 17–55). Before the major 20th-century irrigation projects in Upper Egypt, the Nile flowed through a narrow valley for approximately 300 kilometres north of Wadi Halfa without significant obstacles until it reached the First Cataract near Aswan (Ball, 1939, pp. 2–5). The construction of Lake Nasser now occupies

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this area. The Nile's currents flow from south to north, and opposing winds made it navigable in both directions along its length.

From Aswan to the Mediterranean Sea, the Nile extends for 1,200 kilometres through a narrow valley, comprising the Nile Valley and the Delta (al-Manāwī, 1966, p. 106). The river has carved a deep, wide gorge into the desert plateau, with occasional shoals arising from sediment accumulation (Woodward et al., 2022, pp. 388–394). The annual flooding, known as "akhet," occurs between June and September, with heavy summer rains in the Ethiopian Mountains causing the Nile to overflow onto the flat desert land in Egypt (Bell, 1975).

Before the construction of the High Dam in the 1960s, the velocity of the Nile varied according to its gradient, which influenced travel times from Aswan to Cairo. During the summer flood season, the water took about six days to cover the distance at a velocity of approximately 8 km/h, whereas in the low-water season, it required ten to twelve days at a velocity of about 1.8 km/h (Said, 1981, pp. 80–81; Hassan, 1997, p. 61). This seasonal variation affected the speed of vessels on the Nile, making travel during the flood season preferable for quicker journey shipments.

The Nile Valley experiences moderate north and north-westerly winds throughout the year, rendering the river navigable in both directions at nearly all times (Vermeersch and Van Neer, 2015, p. 158). As one moves north of Aswan, the river is flanked by an expanding floodplain that ultimately fans out to form the delta. The scale of agriculture increases towards the north, with the delta sustaining a substantial portion of Egypt's agricultural land and population (El-Asmar and Hereher, 2011). However, Aswan's first cataract poses a natural barrier for upstream travel by sailboats or oars, characterised by rocky rapids and small islands (Bunson, 2009, p. 115).

, Egypt was geographically divided into Lower and Upper Egypt, with Lower Egypt encompassing the delta region and Upper Egypt extending from the delta to the first cataract at Aswan. Despite the Nile flowing only 170 kilometres through the delta, it contained approximately twice the agricultural land compared to Upper Egypt, covering about 22,000 square kilometres, which influenced the size of Nile traffic and the movement of goods (El-Asmar and Hereher, 2011).

Tracing the Nile north from Aswan, the valley initially narrows and is flanked by sandstone cliffs until it reaches near Kom Ombo, where a broad flat plain emerges. The valley then narrows again at the Gebel Silsila gorge, historically known as "Kheny" or "The place where you have to row." This name likely originated from the challenging and vigorous flow of the river due to the constriction of the Nile's channel. Additionally, mountains on both banks obstructed the prevailing wind, compelling boatmen to row through this section. The Gebel Silsila gorge, characterised by extensive sandstone quarries exploited from the 18th Dynasty to Greco-Roman

times, recently revealed ornamented blockwork and a hieroglyphic text at the temple site near the quarries, referencing the site's ancient name, Kheny (Gebel Silsila Survey Project, 2015).

Continuing downstream, the Nile flows through a narrow valley for an additional 30 kilometres before gradually broadening to form the delta (Woodward *et al.*, 2008, p. 267). Near Esna, approximately 160 kilometres downstream from Aswan, the sandstone cliffs transition to limestone, continuing all the way to the delta. At Qena, about 120 kilometres downstream from Esna, the Nile takes an eastward swerve, leading to a significant broadening of the valley. Limestone cliffs, rising to heights of 300 meters or more on either side of the valley, characterize this region.

The limestone cliffs near Qena also served as the site for the construction of ancient Egyptian tombs in the "Valley of the Kings," west of Luxor. As the Nile flows towards Assiut, approximately 260 kilometres downstream from Qena, the cliffs on the western side are much lower than those on the eastern side, maintaining this configuration for about 400 kilometres until they reach Cairo. From Qena to the delta, the river predominantly flows on the eastern side of the valley. Notably, nearly 90% of cultivable land in Upper Egypt is located on the west bank of the Nile, affecting the establishment of towns and villages and influencing the shipment and movement of goods and products.

Over the past two millennia, the most significant geomorphological change affecting the Nile Delta has been the substantial alteration in the number and position of its ancient distributaries (Pococke, 1743; Said, 1981; Hassan, 1997). Beyond Cairo, the Nile flows in a north-westerly direction for approximately 20 kilometres before branching into the Rosetta and Damietta branches of the Delta. The western branch, which discharges into the Mediterranean at Rosetta, spans about 236 kilometres, while the eastern branch, reaching the sea at Damietta, covers approximately 242 kilometres. Notably, the Rosetta branch features a broader profile, with an average width of 500 metres, compared to the narrower Damietta branch, measuring only 270 metres in width (Woodward *et al.*, 2008, pp. 418–420).

Numerous ancient authors, historians, and travellers, including Herodotus, Strabo, Diodorus Siculus, Pliny, Ptolemy Claudius, Ibn Mājid, and al-Idrīsī, documented the branches of the Nile in antiquity. However, noticeable variation exists among them regarding the exact number, names, nature, and routes of these branches, suggesting that changes occurred over time. Despite these variations, it is evident that most branches were navigable, significantly contributing to the development of Egypt's internal transport system. Furthermore, the Egyptians demonstrated exceptional skill in enhancing navigation on the Nile by excavating navigable canals over millennia.

Presently, only two branches of the ancient Nile remain. The silting of other branches occurred generally from east to west, likely associated with periods of high sedimentation rates in the first millennium AD (Delta, Fattah and Frihy, 1988). The Nile Delta has undergone substantial changes due to the river's flooding, accompanied by a general tilting of the Delta towards the west. This led to a reduction in water supply for the eastern branches, ultimately resulting in their extinction, while the western branches experienced an increase in water supply. Consequently, the Rosetta Branch is now almost twice as wide as the Damietta Branch, with speculation that the ancient Canopic Branch may have been even wider.

Various factors contributed to the decline of the ancient Nile branches during the first millennium AD, including successive incompetent administrations after the 3rd century AD and social and political unrest by the end of the Roman period (al-'Abbādī, 1999, pp. 243–271). The failure of local authorities to maintain distributaries during periods of heavy sedimentation further exacerbated their siltation (Said, 1993, p. 70). It has been suggested that the two surviving branches are somewhat artificial, contributing to their survival due to a relatively direct route to the sea, a steeper slope, and a stronger current compared to the natural branches, albeit at the cost of their decline.

4.2.1 Nile flood

The impact of the Nile on nature and society has prompted increased discussions about climate variability and change in recent years. An illustrative example of climate change study is the time series analysis of the minimum and maximum flood levels of the River Nile. The River Nile experiences varying floods with significant fluctuations, ranging from very low to very high levels.

Ancient Egyptian texts reveal the earliest concepts of flood management, with evidence dating back to around 3,100 BC. The historical relief of the mace head of the Scorpion King, also known as the Major Scorpion macehead, currently housed in the Ashmolean Museum, depicts one of the last Pre-dynastic kings ceremoniously cutting a ditch in a grid network, signifying the beginning of water control practices for agriculture nearly 5,000 years ago (Butzer, 1976, p. 50).

Given that Nile water was the primary source of life for Egyptians due to the arid climate and limited rainfall, the Egyptians took a leadership role in flood management. The necessity of Nile water compelled the Egyptians to address one of their initial challenges: measuring water levels.

The volume and seasonality of the Nile's flood discharge are primarily influenced by climatic impacts on rainfall over the Nile sources in Ethiopia and Equatorial Africa. The River Nile flood

shows considerable variation due to the distinct characteristics of the Nile basin. Annual flood volumes can range from as high as 150 billion cubic metres (e.g., in 1878/1879) to as low as 42 billion cubic metres (e.g., in 1913/1914) (Yousef *et al.*, no date, p. 253). Extreme instances of deficient and excessively high floods each entail their own set of consequences. Low floods result in water supply shortages, navigation challenges, and sedimentation issues, while high floods cause significant impacts such as inundated areas and effects on riverbanks, beds, and maritime structures.

Typically, the flood reaches its maximum height in the Delta by the end of September or early October, inundating the floodplain to depths of 1 to 3 metres. The flood remains stable for about a month before receding rapidly, leaving the first basins in Upper Egypt dry by November. By December or January, the river returns to its normal level, and the water level continues to drop until reaching its lowest point by June, reducing the Nile to half its ordinary breadth (Butzer, 1976; Said, 1993, pp. 96, 97).

4.2.2 Nile flood control systems and public works on the Nile

Since the inception of Egyptian civilisation, various flood control methods and projects have been implemented. However, it was during the reign of Mohamed Ali that Egypt reached a zenith in public irrigation works. Canals, dams, and embankments were introduced to the Nile system throughout the country, with particular emphasis on the Delta region. The 19th and 20th centuries witnessed a shift in the internal policies of the Egyptian administration, directly impacting the navigable stretches of the Nile and the utilisation of Nile water for irrigation purposes. This section will delineate the various strategies employed for Nile flood control and their implications for navigation activities and river traditions.

4.2.2.1 Dynasty of Muḥammad ‘Alī 1805 – 1882

Muḥammad ‘Alī assumed the role of Governor of Egypt in the early 19th century. During his tenure, he implemented extensive and costly public works, particularly focused on flood control. Facing a shortage of suitable timber in Egypt, Muḥammad ‘Alī sought the support of the Ottoman Empire, securing Anatolian timber for his ambitious projects. In 1817, he issued a decree for the planting of *Acacia nilotica* (sunt) and *Zizyphus spina-christi* (nabq) to ensure a sustainable supply of timber for irrigation works.

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One significant project involved the construction of an embankment along the entire length of the Nile from Silsela to the Mediterranean, spanning 2,320 km. This protective embankment, initiated after the British army's incursion in Abū Qīr in 1801, aimed to safeguard against high floods.

During his rule, Mohamed Ali oversaw the excavation of several irrigation canals, totalling 1,287 km in length. The Maḥmūdīyah canal, linking Alexandria with the Nile, became a pivotal public work of the 19th century. Despite setbacks, including interruptions to the work, the canal was successfully opened to water flow in February 1821. To maintain navigability throughout the year, a temporary dam was constructed annually at the canal entrance, necessitating the transfer of goods and passengers between canal boats and riverboats in the town of Al-'Atf for four months. However, in 1842, permanent dams with water locks were built at both ends of the canal to accommodate the increasing boat traffic. In 1849, steam engines were introduced at the canal entrance to sustain water levels year-round. Regular upgrades to the machinery were conducted until 1922 when modern pumps and diesel engines replaced the antiquated equipment (Toussoun, 1942; Al-Shafei Bek, 1950, p. 31; Mikhail, 2011, pp. 242–290).

In the first half of the 19th century, Linant de Bellefonds, head engineer of public works in Lower Egypt and later director of the Department of Public Works, played a pivotal role in executing significant public works for Mohamed Ali. In 1833, Linant designed the first regulating dam in Lower Egypt, also known as the Delta Barrage. The dam aimed to supply the delta with reserved water during the summer, thereby facilitating irrigation. However, the project encountered delays and revisions, with French engineer Mougel Bey amending the original designs in 1843. After various modifications and reinforcement efforts, the Delta Barrage was eventually opened in 1861, reinforced in 1890, and ultimately replaced by the new Muḥammad 'Alī Barrage, inaugurated in December 1939.

During Ismail Pasha's reign, extensive projects were undertaken along the Nile as far as Khartoum. Navigational canals were enhanced, and in 1860, the Ism'aliah Canal was excavated to provide fresh water and facilitate transportation in the Canal Zone. Stretching from Shoubra in Cairo to Ismaliah, it ended at Temsah Lake. In 1874, the Ibrahemeah Canal, extending approximately 268 km from Assyut to Beni Sweif, was constructed. Initially lacking water locks or barrages, a water lock was built in 1902 at its entrance, allowing navigation up to Malaouy, where short permanent bridges were later added.

These initiatives underscore the dynamic efforts to control the Nile's flow and enhance navigational infrastructure during the 19th century (Al-Shafei Bek, 1950, pp. 44–60; 'ilm al-Dīn, 1989, pp. 18–20; Ali, 2014, pp. 143–181).

4.2.2.2 British Occupation 1882 – 1922

During the British administration, numerous bridges and navigation locks were constructed to facilitate traffic on the Nile. Notable bridges, such as the Zamalek Bridge (1908-1912) and the Qanater Al-Khairia Bridge (1907), supported tramway and railway lines in Cairo. Additionally, eleven navigation locks were added to various barrages, particularly focusing on the remodelled Muḥammad 'Alī Barrage in northern Cairo, which accommodates the Rosetta and Damietta branches.

The British administration's overarching aim was to control the Nile to manage agriculture, thereby supporting the textile industries in Manchester. As a result, the Aswan Dam project began in 1898 and was completed in 1902, creating the world's largest reservoir at that time. An associated diversion barrage at Assyut redirected water released from the dam to the agricultural lands of Middle Egypt, emulating a parallel Nile via the Ibrahemia canal. Although the dam included four navigation locks, an additional lock was later constructed 2 km north of the dam to enhance navigation through the first cataract.

Due to financial constraints, the original height of the dam, which was 114 metres, was reduced to 106 metres above datum level. However, between 1908 and 1912, the dam underwent enlargement and heightening, which included the addition of a new navigation lock to the existing four. At the same time, a barrage in Esna was constructed in 1908 to secure water for the irrigation of the Qena Province (al-Ḥittah, 1967, pp. 220–226; Shahin, 1985, p. 447; 'ilm al-Dīn, 1989, pp. 21–36).

4.2.2.3 Kingdom of Egypt 1922 – 1953

In response to changing circumstances, the British administration initiated a plan in 1924, following the semi-independence of Egypt and the establishment of the modern Egyptian Kingdom. Based on the 1920 Nile Control study, the plan aimed to construct new dams on the Blue and White Nile and promote the cultivation of Egyptian long-staple cotton in Sudan. To support irrigation development, the Egyptian government conducted a mission in 1927, leading to the dam's increase in height to 121 metres in 1934. This comprehensive Nile control scheme also resulted in the construction of the Nag'a Hammadi regulation barrage in 1930.

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The deteriorating condition of the old Mohamed Ali barrages, known as the Delta barrages, required replacement rather than remodelling or repair. Consequently, the new Delta Barrages were constructed and completed by 1939. Moving further north, two additional barrages were built—Zifta barrage on the Damietta branch, originally constructed during the British administration but remodelled between 1949 and 1953, and Edfina barrage on the Rosetta branch, constructed between 1948 and 1951 (Shahin, 1985, pp. 447–449) (Figure 45).

4.2.2.4 Republic 1953 – Present

In 1953, following the Free Officers' coup, Egypt transitioned into a republic under President Gamal Abd El-Nasser. Facing the challenge of a rapidly increasing population, plans were initiated by the Egyptian Ministry of Public Works for the long-term regulation of the Nile River. The Aswan Dam was selected for expansion and heightening, along with the addition of a hydroelectric power project. Although earlier plans by Mohamed Ali included power production from the Delta Barrages, they were not fulfilled.

Concerns regarding the new hydroelectric extension of the Aswan Dam resulted in its temporary halt, and proposals for a completely new dam, located 6 km south of the Aswan Dam, were put forward. Offers of funding from the USA and British governments were retracted, prompting the Egyptian government to nationalise the Suez Canal in 1956 to finance the ambitious project.

Construction at the new dam site began in 1960, culminating in the completion of the Aswan High Dam in 1970. The reservoir, known as Lake Nasser, stretches 550 km in length and 35 km at its widest point. The dam, which lacks navigational locks, marked the end of navigation between Sudan and Egypt. Lake Nasser submerged numerous Nubian temples, necessitating a UNESCO-led archaeological rescue operation between 1960 and 1980.

The Aswan Dam features two hydroelectric power plants, Aswan I (1960) and Aswan II (1985-1986), which have rendered navigational locks obsolete. Furthermore, the Sehil navigation lock has become non-functional. Since the dam's completion, the Ministry of Water Resources and Irrigation has undertaken various modifications, renovations, and replacements of the regulation barrages on the Nile. The Esna barrage was the first to be replaced in 1995, followed by the Nag'a Hammadi barrage. A feasibility study conducted from 2000 to 2005 for rehabilitating the Assiut barrage concluded that a new barrage was necessary, leading to the completion of the New Assiut Barrage and power plant 2017.

4.3 History of Modern Egypt

4.3.1.1 French Occupation 1798 – 1801

Egypt, a province under Ottoman control since 1517, faced internal disorder and dissension among the ruling Mamluk elite. France sought to annex Egypt to its colonies, safeguard trade interests, and disrupt British connections with Indian colonies, thereby weakening British commercial power (Baldwin, 1801; Starkey and Starkey, 2001).

Trade in the Red Sea, initially exclusive to Egyptian Muslims, witnessed its first European venture in 1775 by George Baldwin. However, a firman in 1778 restricted the Gulf of Suez and the port of Jeddah strictly for pilgrimage, impacting Baldwin's trade. Despite becoming the first British Consul-General in Egypt in 1786, Baldwin's efforts to promote the overland route and connect the seas lacked British government support, leading to the consulate's closure in 1793 (Baldwin, 1801, p. 31; Starkey and Starkey, 2001, pp. 34–37).

In 1798, Napoleon Bonaparte landed in Egypt, defeating the Mamluk army. Establishing the Institut d'Égypte, he became the legislator, fostering various institutions. Meanwhile, Horatio Nelson's British fleet vanquished the French fleet near Alexandria. With Bonaparte's departure in 1799, the British seized Egyptian antiquities, including the Rosetta Stone. The 1802 treaty ended hostilities, returning Egypt to Ottoman rule.

The Egyptian expedition included 167 scientists and scholars, leading to the *Description de l'Égypte*. Despite its comprehensive coverage, Nile boats received minimal attention, occupying only two pages in the publication (Jomard, 1809).

Amidst conflicts, Muḥammad 'Alī, an Albanian, took control of Egypt in 1805, bringing a degree of stability to the region.

4.3.1.2 Dynasty of Mohammed Aly 1805 – 1882

4.3.1.2.1 Muḥammad 'Alī

Born in 1769 in Cavala, Macedonia, Muḥammad 'Alī Pasha, hailing from an Albanian merchant family, shared a birth year with Napoleon Bonaparte. Rising through the ranks of the local police force and merging his military and merchant professions, Muḥammad 'Alī's journey took a pivotal

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turn in 1798 when he, as a lieutenant leading a troop of three hundred men from Cavalla, allied with the Turkish army to confront the French in Egypt (Daly, 2008, p. 142).

In subsequent years, Muḥammad 'Alī ascended to the position of commanding officer of the Albanian cavalry, ultimately becoming the leader of the entire Albanian contingent. Through strategic manoeuvres and alliances, he gained control over all Albanian troops in Egypt. In 1805, Muḥammad 'Alī, through a blend of persuasion and bribery, secured the role of Governor of Egypt, confirmed by the Sublime Porte in Constantinople (Daly, 2008, p. 14).

In his pursuit of nation-building, Muḥammad 'Alī sought French assistance, influenced by his mentor Monsieur Léon from Cavalla. This connection with the French raised concerns among the British, leading to their invasion of Egypt in 1807. However, Muḥammad 'Alī's forces emerged victorious, prompting him to invite French soldiers, sailors, and engineers to aid in Egypt's development modernization.

Confronting challenges from the Mamluks, Muḥammad 'Alī decisively addressed them in 1811 through the infamous "Citadel's Massacre." With stability restored, Muḥammad 'Alī focused on the welfare and prosperity of Egypt, championing industrial, administrative, and educational reforms. Under his rule, Egypt became a safer haven for travellers, explorers, engineers, archaeologists, and scholars scientists.

Initiating a revolution that transformed social, political, and commercial dimensions, Muḥammad 'Alī established numerous factories, arsenals, and educational institutions, signifying a period of substantial change in Egypt's landscape (Paton, 1863, p. 71; Murray, 1898, p. 46).

Muḥammad 'Alī Pasha, possessing an ambitious vision for a modern Egypt, recognised the pivotal role of the Nile in the nation's commerce and agriculture. To finance his extensive projects, he focused on maximising revenue from Egypt's lands. During the Mamluk era, Rosetta served as the principal port, but its limitations compelled the Pasha to seek alternatives. The hazardous entrance due to a submerged sandbank led to the development of an anchorage at sea. Small vessels, known as Jarim, transported goods from large merchant ships to Rosetta, facilitating trade up the Nile to the Ottoman capital.

Recognising Alexandria's potential, Muḥammad 'Alī aimed to revive the city as Egypt's main port. Despite years of neglect, he envisioned Alexandria as a thriving emporium. To fund his grand ambitions, the Pasha endeavoured to become the sole proprietor of Egypt's lands. He initially monopolised grain exports from Alexandria, expanding control over all agricultural products in

Egypt. This strategic manoeuvre secured his dominance over the flow of goods and taxation from Upper Egypt and the Delta to Alexandria and beyond, reaching the Mediterranean. Large barrages were built in northern Cairo to regulate the Nile's flow into the Delta lands.

To restore Alexandria's former glory, Muḥammad 'Alī undertook transformative actions. In 1820, he initiated the construction of the Maḥmūdīyah Canal, re-connecting the city with the Nile, a development that will be discussed later. Additionally, the Pasha established a state-of-the-art arsenal, aiding Alexandria's resurgence. Through these efforts, the city experienced a renaissance after centuries of decline, and Muḥammad 'Alī secured a monopoly as the sole controller of the country's grain trade (Cameron, 1898, pp. 84–88; Wilson, 1964, p. 22; Overton, 1971, p. 12; Marsot, 2004, p. 222; Daly, 2008, p. 147; Ghazaleh, 2013, p. 74).

To regulate the internal movement of goods, particularly grain, Muḥammad 'Alī Pasha implemented significant measures between 1811 and 1812. He began the construction of approximately 200 Germs-type boats and other merchant vessels at the Bulaq arsenal. The Pasha personally financed these boat-building efforts, covering all associated costs, including the maintenance of grain vessels and the wages of sailors and boatmen. This represented a departure from the previous taxation system (Driault, 1925, pp. 106–177; al-Jabartī, 1997, pp. 152–153; Marsot, 2004, p. 224).

By introducing new crops such as long-staple cotton, the Pasha facilitated large-scale cultivation in the Nile Delta. This necessitated new irrigation projects to ensure that summer canals retained water year-round, independent of the river's annual inundation (Marsot, 2004, pp. 226–227). Muḥammad 'Alī's police reforms during his reign contributed to stability, allowing smoother movement of goods and individuals across the country. Consequently, there was a remarkable increase in the number of sailing boats on the Nile, escalating from 1,600 in the early 19th century to 3,300 in 1840, with the majority under the direct control of the Pasha ('ilm al-Dīn, 1989, p. 14; Marsot, 2004, p. 231).

The Pasha's welcoming attitude attracted numerous Westerners to Alexandria, fostering European exploitation of Egypt. Many individuals benefited from the Pasha's generosity, selling their inventions to Muḥammad 'Alī and amassing considerable wealth. Historical figures such as Henry Salt, Giovanni Belzoni, and John Burckhardt received a "firman" personally signed by the Pasha, granting them permission to travel up the Nile, study, and collect ancient Egyptian artefacts (Weighall, 1915, pp. 61–73; Wilson, 1964, p. 23). The researcher suggests that Napoleon, Muḥammad 'Alī, and later his descendants played a significant role in fuelling Egyptomania in the western world during the 19th century, leading to a surge in tourism for exploration and antiquities collection.

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In 1841, Muḥammad 'Alī was officially granted the governorship of Egypt for life, extending to his descendants. This formal appointment obliged him to adhere to Ottoman treaties concerning fair trade, as outlined in the Balta Liman agreement of 1838. Despite this obligation, the Pasha skilfully navigated the trade landscape, allowing foreign traders to have direct contact with farmers while maintaining control over the Nile trading flotilla. Eventually, foreigners were permitted to construct their boats, provided they hired local Egyptian boatmen and displayed the national flag on their vessels ('ilm al-Dīn, 1989, p. 15; Daly, 2008, p. 175). Nevertheless, the Pasha was determined to preserve his internal monopoly and resist interference from Western traders and consuls. He instituted a new order that secured his family's dominance by redistributing agricultural lands to relatives and close associates. Additionally, he reorganised the government, centralising control under his ministers and implemented a new taxation system on internal trade, along with tariffs on boat anchorage in Nile riverine ports such as Boulaq and Old Cairo (Marsot, 2004, p. 375).

Britain, influenced by the earlier ideas of its consul in Egypt, George Baldwin, ultimately embraced the concept of a route to India through Egypt. Efforts were made to persuade the Pasha to establish a railway between Cairo and Suez, but Muḥammad 'Alī rejected the proposal. Nevertheless, he allowed a British overland route from Alexandria to Suez (Starkey and Starkey, 2001, pp. 24–38; Daly, 2008, pp. 176–177). In 1837, Thomas Waghorn advocated for a modification of the maritime route to India, promoting an overland path via Egypt. Waghorn secured a firman from Muḥammad 'Alī to establish the overland route between Alexandria and Suez for mail services, significantly decreasing the travel time between England and India to 90 days by 1835. Between 1836 and 1841, Waghorn expanded his operations in Egypt with the Pasha's support, facilitating swift mail services and accommodating passengers bound for the Colony. A comprehensive network of sailboats, towed barges, steamers, carriages, and rest houses transported passengers and luggage from Alexandria to Cairo via the Maḥmūdīyah Canal, continuing across the desert to Suez, where ships to India awaited (Waghorn, 1844).

Waghorn's monopoly faced challenges from competitors like Hill and Ravin, leading to a merger of companies at the end of 1841. The Peninsular and Oriental Steamship Co. (P. & O.) emerged as a rival, establishing themselves in the Mediterranean and Red Sea routes to India. Utilizing steam tugboats on the Maḥmūdīyah and the Nile to Cairo, P.&O. increased the number of travellers from 275 under Waghorn to 2100 passengers. As the number of travellers continued to grow, the Pasha decided to seize control of this monopoly for himself, compelling all companies on the Overland Route to sell their vessels to a newly formed governmental entity, the Egyptian Transit Company, between 1845 and 1846 ('ilm al-Dīn, 1989, p. 16; Stubens, 1993, pp. 17–26).

In 1847, the Pasha marked his final public act by laying the foundation stone of the great Barrage in Cairo, intending to construct it from the stones of the Pyramids (Cameron, 1898, p. 201). The following year, in 1848, Ibrāhīm Pasha assumed the governorship of Egypt (Overton, 1971, p. 95; Marsot, 2004, p. 381).

4.3.1.2.2 Ibrāhīm and ‘Abbās 1848 – 54

Ibrāhīm, the son of Muḥammad ‘Alī and the general of his army, assumed the rule of Egypt. However, on his return from Constantinople in 1848, he succumbed to a severe fever and passed away (Overton, 1971, p. 95; Marsot, 2004, p. 381). Consequently, in 1848, ‘Abbās Pasha, the son of Tossoun, Muḥammad ‘Alī's grandson, became the successor to his late uncle. In 1849, Muḥammad ‘Alī Pasha, the long-reigning leader, passed away after 44 years of ruling Egypt.

In contrast to his grandfather, ‘Abbās adopted a policy of isolation, restricting access to only a select few. The Egyptian government briefly took control of the mail system between 1848 and 1850, but English companies managed to regain their privileges (al-Mayrī, 2007, p. 37). ‘Abbās's five-year reign lacked significant reforms or changes. His major initiative was allowing the British Government, under the influence of Sir Charles Murray, the British Consul-General at the time, to establish a railway from Alexandria to Cairo. The project commenced in 1851 (Cameron, 1898, pp. 225–228; Daly, 2008, p. 185; Amin, 2012, p. 17).

Simultaneously, a French project was presented to ‘Abbās—the concept of the Suez Canal. Napoleon had previously conducted a feasibility study for such a canal in 1800, but it was deemed impossible at the time. In 1847, the "Societe d'Etudes du Canal de Suez" was formed to revive the idea, although it failed to gain support (al-Mayrī, 2007, p. 3). The Pasha allocated most of his naval forces to the railway project, neglecting the Arsenal and Navy, a departure from his grandfather's strategy (Syrhnik, 1898, pp. 262–263; al-Mayrī, 2007). The railway progressed gradually and did not reach Cairo until 1856 (al-Mayrī, 2007, p. 37)

‘Abbās met a tragic end in 1854, and Muḥammad Sa‘īd Pasha, the son of Muḥammad ‘Alī Pasha, ascended to the throne.

4.3.1.2.3 Sa‘īd 1854 – 63

Sa‘īd Pasha represented a stark contrast to ‘Abbās, having received education in Europe and harbouring ambitious plans for Egypt's national economy. He dismantled the monopoly system, transforming the taxation system from in-kind to coin collection. To aid in his endeavours, the Pasha sought European expertise, permitting European banks to establish branches in Alexandria.

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Continuing the expansion of railways, Sa'id Pasha completed the connection between Alexandria and Cairo and established a new railway from Cairo to Suez. In 1854, he founded a governmental administration department known as the "Department of Tugboats" or River Transport Authority. The department acquired 40 steamboats and 82 barges, enhancing transportation along the Maḥmūdīyah Canal. New docks and warehouses were constructed, and water pumps installed at the canal's beginning in "Atfeh" ensured year-round navigation (Syrhnc, 1896, pp. 270–272; 'ilm al-Dīn, 1989, p. 16; al-Mayrī, 2007, pp. 115–116).

Upon realizing the significant time advantage of steamboats over sailboats for the Alexandria-to-Cairo route, Sa'id Pasha established the "Egyptian Steam Navigation Co" to transport cargo and travellers, even towing sailboats with steamboats ('ilm al-Dīn, 1989, p. 16; al-Mayrī, 2007, pp. 115–116).

Ferdinand de Lesseps, the French consul in 1854, shared Bonaparte's vision of connecting the two seas. After persistent efforts, Sa'id Pasha approved de Lesseps' request in 1856, forming a consortium to study the Suez Canal project. The contract, signed in 1859, involved excavating two canals—one connecting the Mediterranean with the Red Sea and another linking the Nile to the first canal. Sa'id Pasha facilitated land requisitions and supplied the company with 20,000 workers. Work commenced in 1859, reaching Eltemseh Lake by 1862. However, financial and technical challenges, coupled with the Sublime Porte's delay in granting the necessary firman, led to the project's suspension. Simultaneously, Sa'id Pasha accrued significant debts from European banks, borrowing a substantial sum. By the time of his death in 1863, Egypt was indebted by 18 million Sterling Pounds (Syrhnc, 1896, pp. 277–278; Daly, 2008, p. 187; Amin, 2012, pp. 18–21).

4.3.1.2.4 Isma'il 1863-79

Isma'il, the son of Ibrāhīm and the general of Muḥammad 'Alī's army, ascended to the position of Pasha of Egypt following his uncle's passing. Distinguished by his administrative prowess, Isma'il shared his grandfather's vision and sought to liberate Egypt from Ottoman censorship. He tirelessly worked towards attaining the status of "Khedivate" for Egypt, aiming for autonomy in treaties and internal law without relying on the approval of the Porte (Overton, 1971, pp. 96–105).

Under Isma'il's rule, the Nile flotilla expanded, and a new department for "Commercial Vapour" (Alwābwrāt al-Bukhārīyah al-Tijārīyah) was established, encompassing all boats—steam and sail—utilised in transporting goods on the Nile, Mediterranean, and the Red Sea. Navigable riverine canals were extended, including the maintenance of crucial waterways such as the Maḥmūdīyah

Canal. Sailboats, benefiting from the newly dug "Sweet Water Canal," reached Ismailia during his reign, a by-product of the Suez Canal excavation contract (al-Mayrī, 2007, pp. 116–118).

Despite the rapid growth of Egypt's internal railway system, the Nile transportation network remained largely unaffected. In 1872, there were 9,563 sailboats and 53 steamboats or tugs operating on the Nile, proving particularly effective during years of high flooding when railways faced obstructions (‘ilm al-Dīn, 1989, p. 17; al-Mayrī, 2007, pp. 115–112). In 1867, Isma'il became the first Khedive of Egypt after bestowing lavish gifts upon the Porte and his Vizier for years, which caused economic strain. His ambitious vision of integrating Egypt into Europe led to a rise in external debt, reaching 91 million Pounds by 1876 (Amin, 2012, p. 28). In March 1869, Khedive Isma'il inaugurated the Suez Canal and subsequently promoted tourist travel via mail steamers along the Nile. Thomas Cook & Son expanded its services in Egypt, eventually assuming control of all government Nile services and steamers (Humphreys, 2015).

In 1875, the British government acquired Isma'il's shares in the Suez Canal, resulting in almost half ownership by Britain. European involvement in Egyptian economic policies intensified due to the Khedive's bankruptcy. The "Public Debt Commission," comprising English and French ministers, was established to oversee Egyptian finances and manage the collective debts of the Khedive. Confronted with dispossession, Isma'il suspended the Dual ministry, which led to official letters from the French and British governments to the Porte. In July 1879, a firman from the Sublime Porte marked the end of Isma'il's reign and the commencement of the Khedivate of his son, Tawfīq (Syrhnc, 1896, pp. 354–366; Cameron, 1898, pp. 259–263; Daly, 2008, pp. 195–197; Amin, 2012, pp. 33–37)

4.3.1.2.5 Tawfīq and the Orabi revolution 1880 – 1882

Mohammed Tawfīq, son of Isma'il, took on the role of the second Khedive of Egypt and ruled until 1897. However, from the outset, the British occupation placed the administration of the entire country under British control rather than that of the Khedive. Financial controllers from six European powers, led by the United Kingdom and France, exerted strict control over Egypt, leaving the Khedive subject to European influence (MacLaren, 1978, pp. 1–9). During his brief two-year period of autonomous rule, Tawfīq endeavoured to regain control of the country following his father's treasury bankruptcy. However, a significant disturbance arose in Egypt, led by the soon-to-be Minister of War, Orabi, and his fellow Egyptian army officers. The unrest, which began in 1879, escalated to its peak in 1882 when Orabi urged the Khedive to return Egypt to the Egyptians. A nationalist and anti-European movement gained momentum, culminating in a major confrontation in 1882 in Alexandria. Local Egyptians clashed with Europeans, resulting in widespread unrest and prompting the British army's intervention, supported by the Khedive, to

protect their citizens and business interests in the country. In September 1882, Orabi faced defeat in the Battle of Tel-el-Kebir (Syrhnk, 1896, pp. 366–454; Cromer, 1908; MacLaren, 1978, pp. 20–26).

4.3.1.3 British Occupation 1882 – 1922

By the end of 1882, Egypt came completely under British occupation, which led to the dismantling of the Egyptian army, including its commercial and military navies. Officers were dismissed, and the internal economy was reoriented to service the debt, primarily owed to the British. Control of Egypt meant control over the Nile, the crucial waterway for cultivating crops along its banks and transporting goods through it (Amin, 2012, p. 39; Milas, 2013, pp. 80–82).

In the early days of British involvement, Thomas Cook and his son established a monopoly on the Nile. Cook & Son Co. became the exclusive company authorised to hire Khedival steamers, transporting tourists along the Nile as far as Aswan. Between 1881 and 1885, Cook & Son Co. acquired the majority of governmental and Khedival steamers, although a small number of mail steamers remained owned by the Egyptian government (Syrhnk, 1896, p. 451; 'ilm al-Dīn, 1989, p. 17).

Evelyn Baring, the 1st Earl of Cromer, served initially as the British Controller-General in Egypt from 1879 and later became the agent and consul-general from 1883 to 1907. His role was to ensure Egypt's economic stability to fulfil European debt obligations. During his tenure, he raised taxes on Nile boats used for transporting goods and significantly increased navigation lock fees, promoting railway transport over riverine alternatives ('ilm al-Dīn, 1989, p. 18).

From a statistical perspective, the Nile transportation system developed in the early 20th century. The number of sailboats traversing water locks and bridges quadrupled, with 22,000 boats passing through the 'Atfeh water lock in 1905, compared to 4,564 sailboats in 1900 (Alam Al-Din 1989: 18). However, this increase was associated with a reduction in Nile lock fees. With the government losing control over Nile boats, private citizens took charge of the internal transportation system, while Thomas Cook & Son Co. solely owned the tourist transportation and Nile mail services. In 1886, Thomas Cook & Son Co. commenced the construction of their own steamers, establishing their shipyard in Boulaq in 1889 (Thomas Cook Archive; Humphreys, 2015).

During British administration, flood management systems were introduced to the Nile, emphasising agriculture, particularly the expansion of growing and exporting long-staple cotton. The expansion of the railway network and the use of steam engines for transporting goods affected sailing boats. Nevertheless, 'ilm al-Dīn (1989) argues that despite the challenges facing Nile navigation, the British administration did not actively maintain or develop an internal

navigation system on the Nile. However, the navigation of sailboats on the Nile increased significantly during the early 20th century and prior to World War I (‘ilm al-Dīn, 1989, pp. 18–21).

4.3.1.4 Kingdom of Egypt 1922 – 1953

The year 1922 marked Egypt's independence from British colonial powers, albeit with certain conditions. Egypt became an independent kingdom, heralding a new era for the country. However, this independence came with stipulations, and true autonomy was not achieved until the late 1930s (Daly, 2008, pp. 285). Even at that time, the British Imperial Army remained stationed in Egypt, and later, during the Second World War, the number of Allied troops in Egypt reached approximately 500,000 soldiers. Many Royal Navy launches were constructed in Cairo at the two largest boatyards: the first was Thomas Cook & Son shipyard in Boulaq, and the second was the Anglo-American shipyard in Shoubra (Figure 38). These boats were reportedly built using local manpower under British supervision, after which they were towed through the Ismailia Canal to Timsah Lake and then to Port Sa’id for the installation of machine guns and engines (Figure 39).

pay off its external debts and even began loaning the British administration large sums of money, approximately 340 million pounds, to cover its war expenses in 1943 (Amin, 2012, pp. 40–46). Both the Egyptian populace and administration anticipated a significant reward of complete independence after assisting the Allies during the war. However, British troops remained stationed in the Canal Zone. In 1946, nationalist demonstrations quickly intensified, demanding the full independence of the country and the withdrawal of all British forces from the Canal area. Negotiations between the Egyptian and British governments regarding the evacuation of Egypt continued until 1951, when Egyptian Prime Minister Al-Nahhas Pasha declared all Anglo-Egyptian treaties null and void, resulting in a major clash between the two nations, which sparked numerous battlefronts between the Egyptian and British armies in 1952 (Daly, 2008, pp. 304-307).

By July 1952, the political and social chaos in the country led to the overthrow of King Farouk, as the Free Officers successfully staged a bloodless coup under the leadership of General Gamal Abdelnasser. This event marked the end of the monarchy and oligarchy era in Egyptian history, which had lasted for thousands of years (Daly, 2008, pp. 307).

4.3.1.5 Republic 1953 – Present

The Free Officers' Coup, or the Revolution of 1952, marked a significant turning point in Egyptian history. During the early days of Mohamed Ali Pasha's rule, reforms were introduced, including a cap on land ownership set at 300 feddans per family. In 1956, President Gamal Abdel Nasser nationalised the Suez Canal to finance the construction of the Aswan High Dam, which led to the

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tripartite aggression by British, French, and Israeli forces against Egypt. In the 1960s, further reforms included a reduction of land ownership to 100 feddans per family and the complete nationalisation of the Egyptian economy, encompassing banking, insurance, transport, and strategic manufacturing (Daly, 2008, pp. 345).

Throughout the second half of the 20th century, Egypt underwent a transformation from an agricultural to an industrial nation. This change impacted the flow of goods and the dynamics of transportation. Unfortunately, information from this period is not consistently accurate due to the fragmentation of Nile navigation affairs among various governmental bodies. In 1954, there were 10,400 sailing boats and ships on the Nile, which decreased to 5,000 by 1960 and further to 3,800 by 1979. However, there was a sudden increase to 6,631 sailboats in 1982/83. Current estimates suggest around 1,000 sailboats (Issawi, 1954, pp. 184–185; 'Irāqī, 2002, pp. 150–192). Contemporary studies indicate that riverine transportation in Egypt accounts for less than 1% of the total cargo transportation in the country, with passenger transport restricted to the Luxor-Aswan route. Resources are directed towards studies advocating for reliance on barge carriers (El-Sersawy and Ahmed, 2005; El-Nakib, 2011; Japan International Cooperation Agency, 2012).

4.4 Discussion

During the process of compiling the information in this chapter, numerous resources were consulted, including both English and Arabic materials, along with some French sources when relevant. Early in the research phases, a theory was tested that argues the construction of the High Dam in the mid-20th century resulted in significant changes to both the environment and the socio-economic conditions of Egyptians, fundamentally altering Nile maritime traditions. This theory faced scrutiny throughout the study's duration and was examined during both the desk-based assessment and the initial two fieldwork phases.

The chapter on the geographical and historical context of this thesis offers a thorough overview of the Nile River's historical importance and its role in shaping Egypt's socio-economic and political landscape. The discussion explores key historical periods, emphasising the Nile's impact on the rise and fall of various rulers and civilizations.

The chapter commences with a thorough examination of the geography of the Nile River, highlighting its crucial role as a life-giving force for ancient Egyptian civilisations. The discussion navigates through the rich tapestry of Egypt's history, beginning with the Pharaonic era and the Nile's central importance in the development of one of the world's earliest and most sophisticated civilisations.

The narrative subsequently shifts to the Ottoman period, where Muḥammad 'Alī Pasha emerges as a key figure in the region's history. Originally from Macedonia, Muḥammad 'Alī's rise to power and strategic manoeuvres—including alliances and conflicts—are intricately outlined. The chapter effectively portrays his contributions to the modernisation of Egypt, from military campaigns to economic reforms, illustrating the complex interplay between local and foreign influences.

As the discussion progresses, the focus shifts to the mid-19th century, marked by the construction of the Suez Canal and the increasing involvement of Western powers in Egypt's affairs. The narrative underscores the economic and political ramifications of these developments, offering a nuanced understanding of the intricate relationships between local rulers, foreign powers, and economic interests.

The mid-20th century becomes a watershed moment with the Free Officers Coup in 1952, symbolising a shift in Egypt's trajectory. The chapter artfully encapsulates the reforms initiated by President Gamal Abdel Nasser, including the nationalisation of the Suez Canal, which triggered international tensions. These events set the stage for Egypt's transformation from an agricultural to an industrial nation.

The discussion adeptly navigates subsequent decades, highlighting key policy changes, economic shifts, and the impact of foreign interventions on Egypt's riverine transportation system. The fluctuating number of sailing boats on the Nile, as well as the evolution of cargo transportation, is presented as reflective of broader economic trends and policy decisions.

This chapter not only sets the stage for later discussions but also provides valuable insights into the complex socio-economic and political dynamics that have defined Egypt's past and present.

The rise and decline of Nile navigation, as outlined in this chapter, are intricately linked to several factors, shedding light on the dynamic interplay between governmental policies, infrastructure development, and the influence of external forces. The historical trajectory of Nile navigation has witnessed fluctuations, each period marked by distinctive characteristics challenges.

1. Government Administration and Policy Shifts: The ebb and flow of Nile navigation are closely linked to the priorities of the ruling authorities. Under Muḥammad 'Alī Pasha's rule, a concerted effort to promote boat building and manage navigation pushed Nile sailing to its peak. The subsequent shift towards steamboats and railways during later administrations, including the British, led to a decline in traditional sailboats. The Republic of Egypt's introduction of purpose-built barges in the mid-20th century signalled a neglect of sailboats until the 1980s, when renewed government interest resulted in a resurgence. Currently, a lack of clear regulations and government neglect has made sailing boats less appealing.

2. Infrastructure Development and Flood Control Systems: The construction of extensive flood control systems and navigable canals had a significant impact on Nile navigation. Mohamed Ali's initiatives in the early 1800s, including the Maḥmūdīyah Canal and Nile barrages, laid the groundwork for a steady increase in the number of sailboats. Ismail's reign, marked by the expansion of canals and the construction of barrages, saw a threefold rise in sailboat numbers. Nevertheless, the establishment of the High Dam in the mid-20th century transformed the landscape, hindering direct navigation and altering water levels. Neglect of bridges and locks following the war further fragmented the Nile sailing system.

3. Role of Tourism: Tourism emerges as a crucial factor in sustaining sailing traditions. The influx of tourists keen on Nile cruises, particularly during the mid-20th century, contributed to the vitality of sailboats. Thomas Cook & Son Co.'s monopoly on tourist transport along the Nile, along with the establishment of a fully functional boatyard in Cairo, underscores the economic significance of tourism in the sailing industry.

In conclusion, the historical context and geographical features have shaped the trajectory of Nile navigation, with governmental policies, infrastructure projects, and tourism serving as pivotal forces. The fluctuations in the number of sailboats on the Nile illustrate the intricate interplay between tradition, modernisation, and external influences. As the chapter elucidates, the current state of Nile navigation reflects a confluence of historical legacies, policy decisions, and contemporary neglect. This intricate tapestry sets the stage for further exploration into the challenges and opportunities facing Nile navigation in the 21st century.

The diagram below was compiled from various historical and archival studies, focusing on sailboats used for cargo transportation and tourism, irrespective of their hull materials.

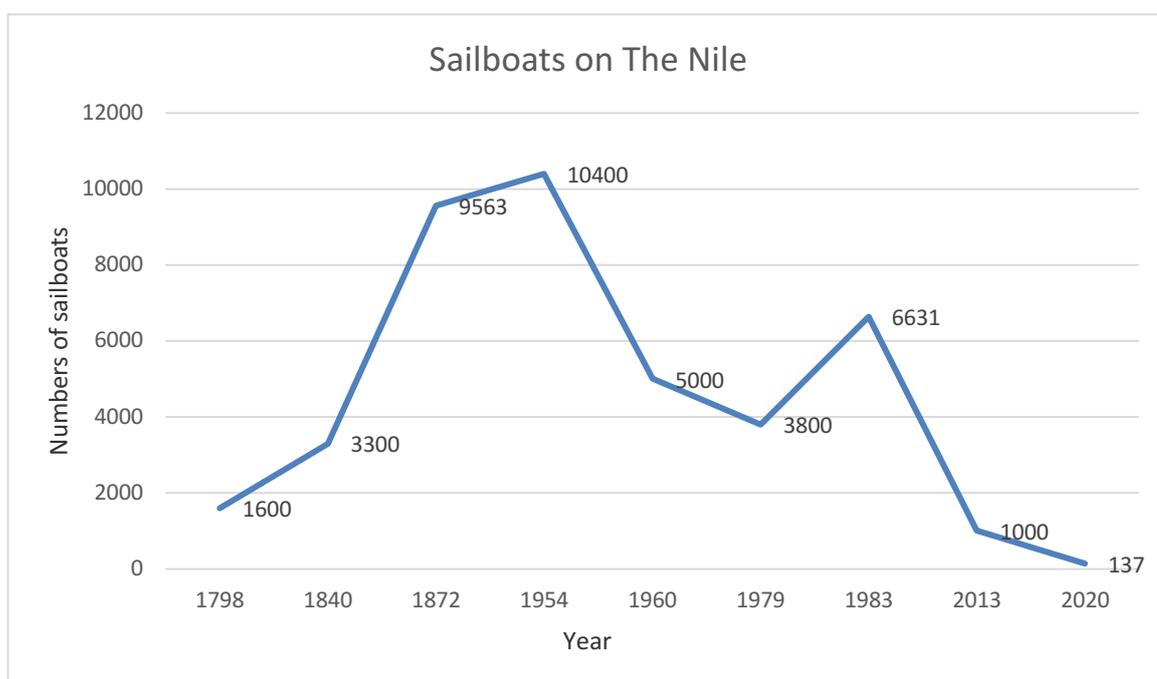


Figure 38: Statistics of sailboats between 1798 and 2020, by the author.

4.5 Chapter Four Figures

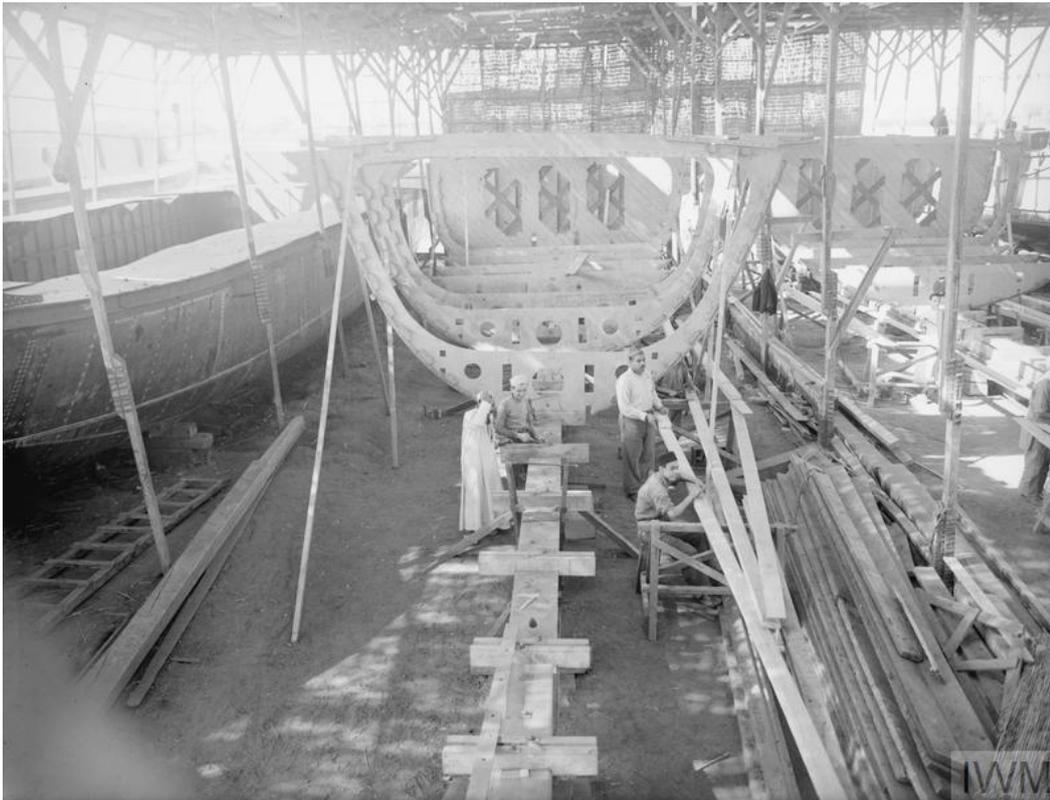


Figure 39: A series showing how Fairmile motor launches were built for the Royal Navy by the Anglo-American Nile transport co in their Shubra yard, Cairo, 1942. © IWM A 15763



Figure 40: The boats were taken in tow from Cairo to Port Said by way of the Ismailia canal, a journey of three days. At the end of the Ismailia canal the boats entered Lake Timsah and proceeded via the Suez canal to Port Said for fitting out, 1942. © IWM A 15791.



Figure 42: Picture of the Macehead including the Scorpion King inaugurating an irrigation network, ca. 3100 B.C. Butzer 1976: 50, Fig. 2.

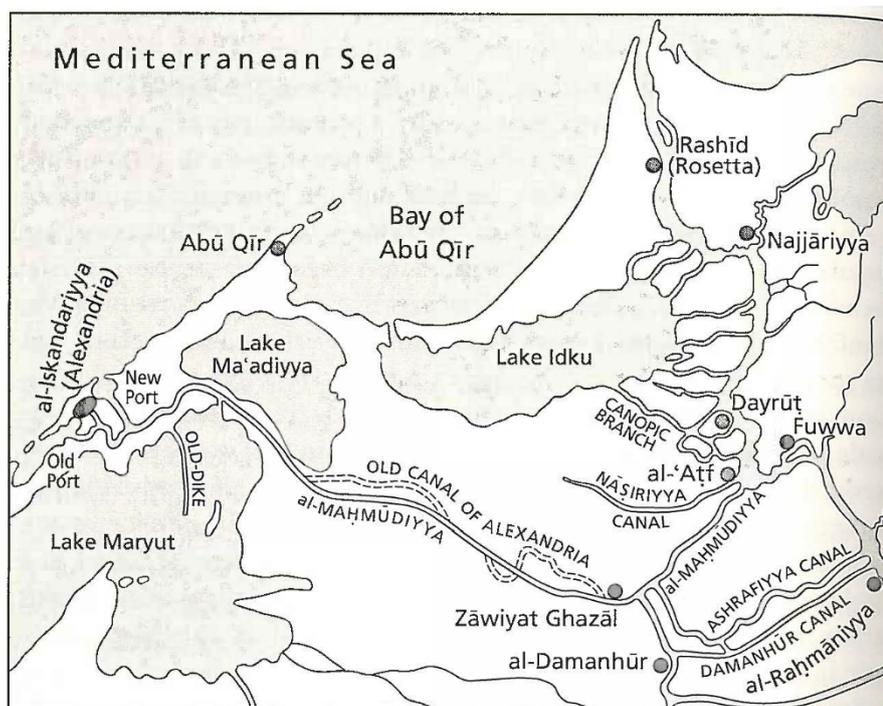


Figure 43: Mahmudiyya Canal. Mikhail 2011: 244.

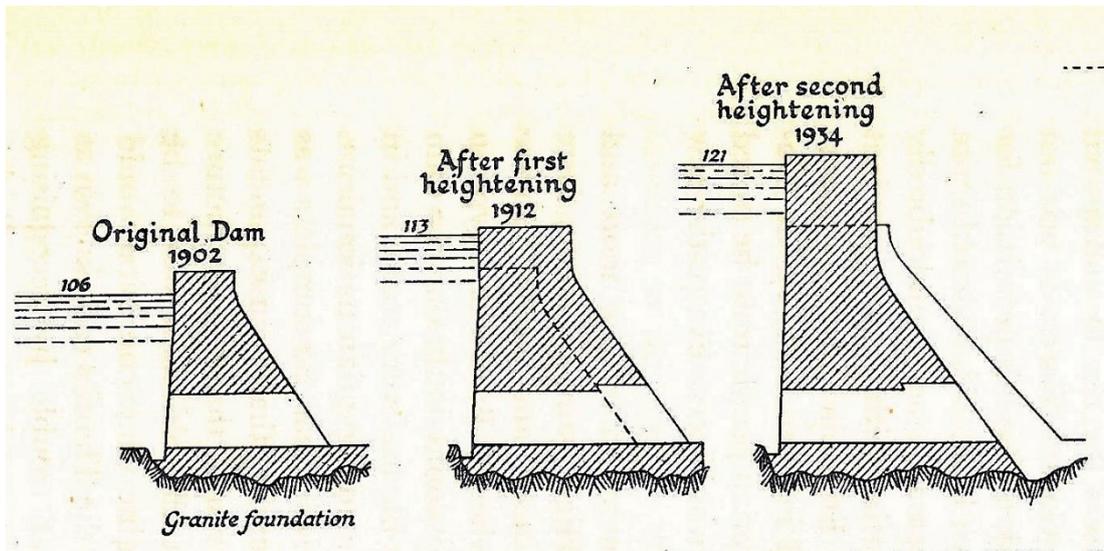


Figure 44: Different levels of the Aswan Low Dam. Addison 1959:120.



Figure 45: A map of all the water control barrages in Egypt. Shahin 1985: 488.

Figure 1. Hydraulic Works on the Nile in Egypt

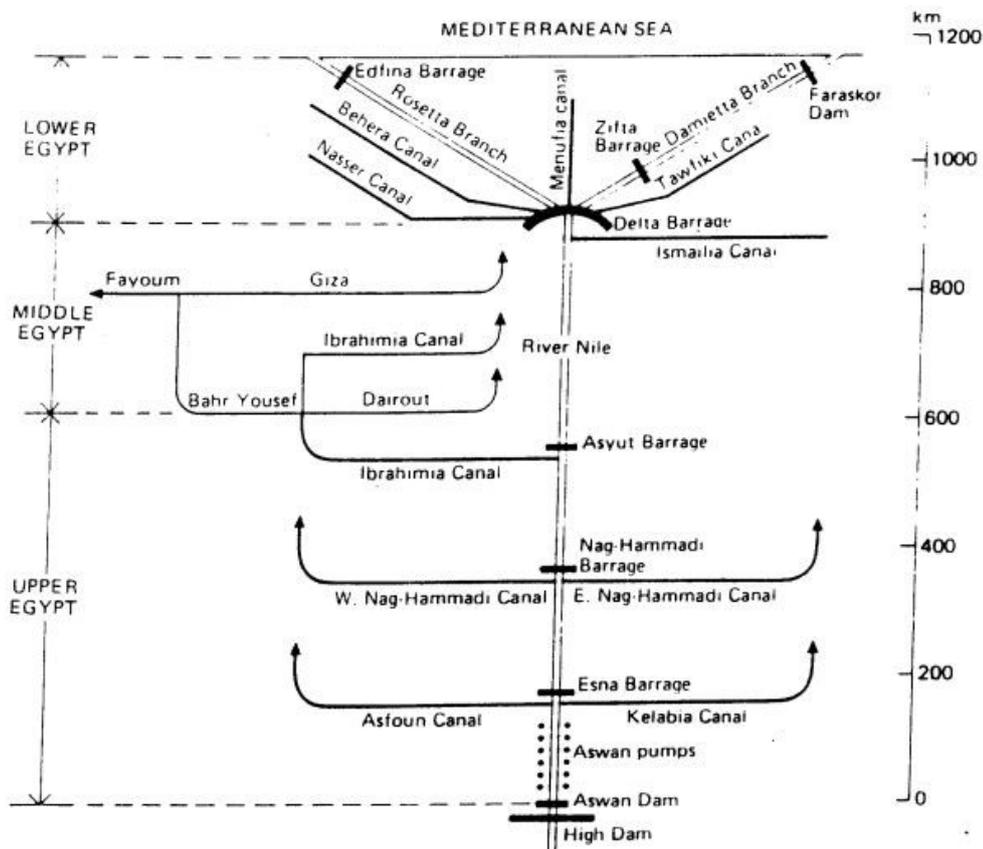


Figure 46: Hydraulic works on the Nile in Egypt. Abu-Zeid 1995: 39.

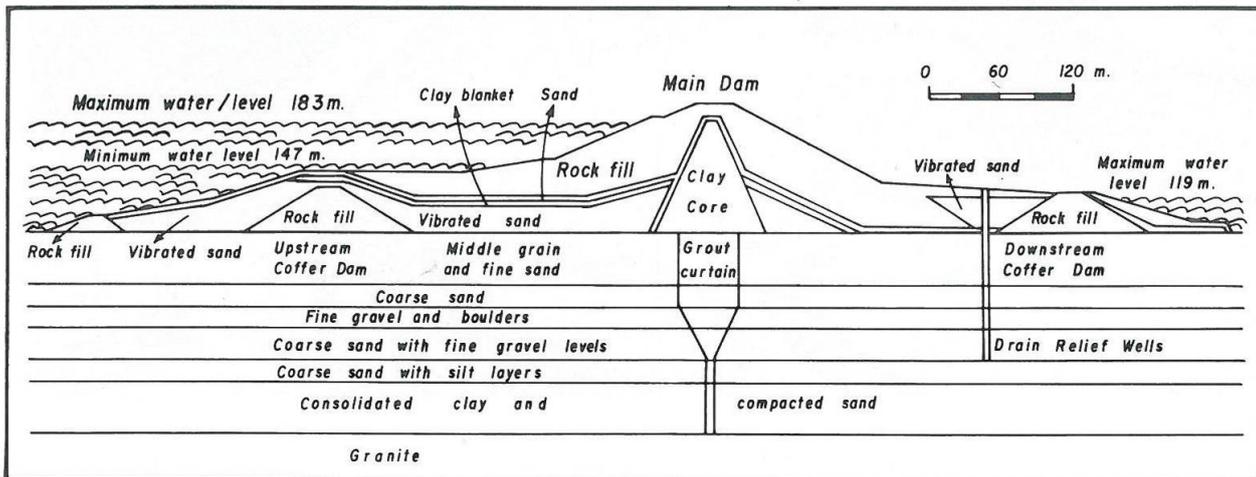


Figure 47: Cross section of The Aswan High Dam. Said 1993: 233.

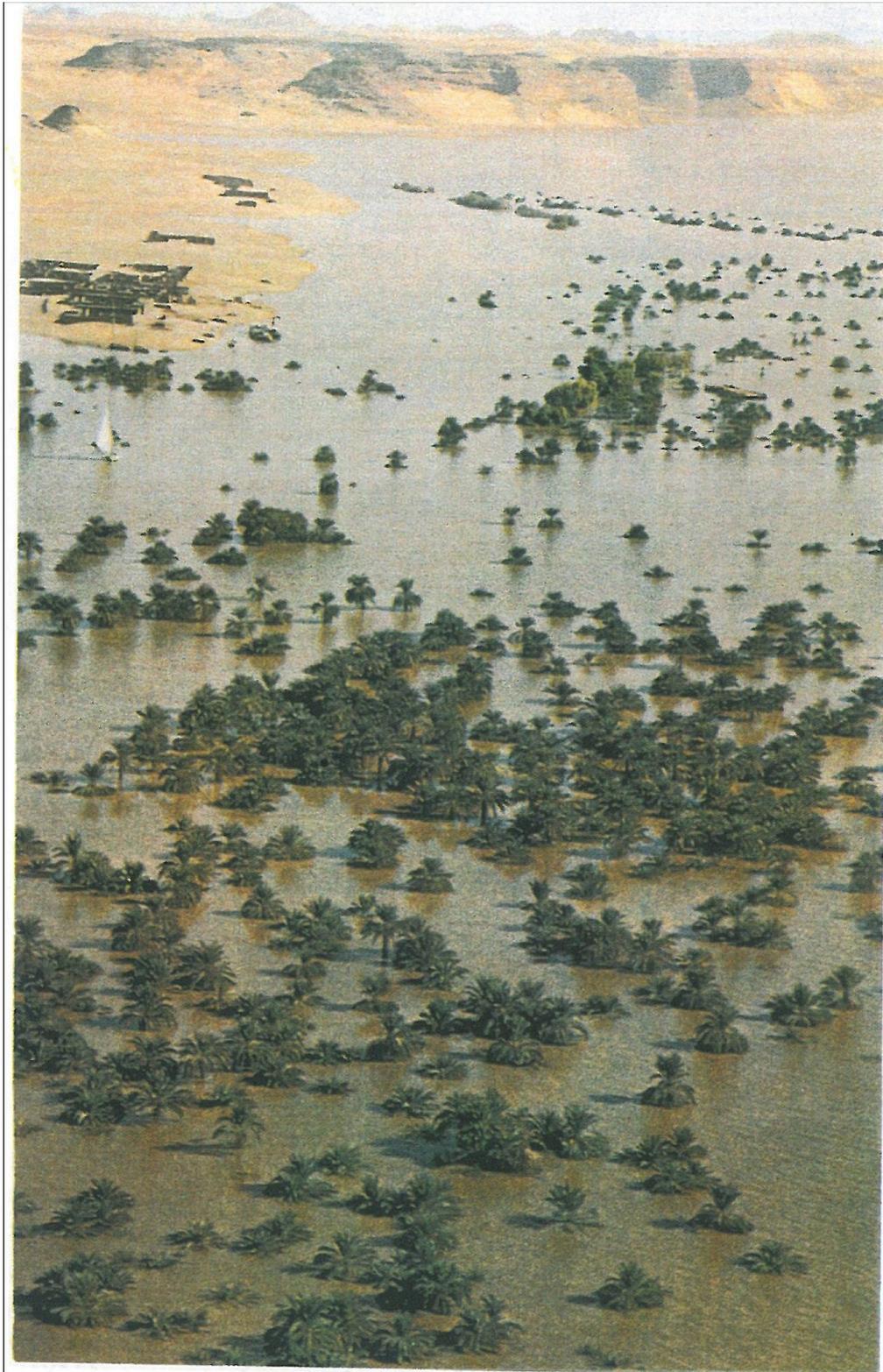


Figure 48: The High Dam effect on Nubian villages up to the second cataract. Said 1993: 243.



Figure 49: Wadi El Seboua Flooded with Lake Nasser waters. Photograph by James Burke - 1960's .

© LIFE.



Figure 50: Three of the Four locks at the Aswan dam between 1950-55. Photograph by Eugene V Harris. University of Wisconsin-Milwaukee Libraries.

Chapter 5 Nile Sail Boats in context

5.1 Introduction

The rich tapestry of Nile sailboats throughout history presents a captivating narrative, interwoven with cultural, economic, and technological threads. As we embark on a journey through the annals of boat typologies along the Nile, we are faced with the nuanced challenge of categorising vessels that have evolved in response to diverse contexts, functional needs, and cultural currents.

The classification of Nile sailboats is no simple task, for it requires unravelling the intricate ties between boat types, the agency of those who construct and utilise them, and the multifaceted purposes they serve. The tension between typology, rooted in physical attributes and design, and the dynamic agency of sailors and boat builders in shaping vessels for their specific needs adds layers of complexity to the endeavour.

Beyond the physical forms of boats lies a narrative of human agency and adaptation, where boats are not static entities but dynamic instruments moulded by the hands and minds of those who navigate the waters of the Nile. This chapter grapples with the inherent challenges of boat categorisation, delving into the historical lineage of boat types from the Mamluk and Ottoman periods to the diverse typologies that emerged in the 19th century.

Navigating the waters of typology, we encounter not only the form and function of boats but also the stories of communities, trade routes, and cultural exchanges etched into the very fabric of these vessels. The terminologies and classifications that have evolved over time are not rigid boxes but fluid descriptors that encapsulate the essence of a boat's purpose and the craftsmanship of those who shaped them.

As we set sail through the chronicles of Nile boats, it is essential to recognise the symbiotic relationship between type and agency, form and function. The vessels that traverse the Nile are not mere objects; they are repositories of history, embodying the adaptive genius of sailors and the interaction between tradition and innovation. This exploration seeks to navigate the waters of categorisation while acknowledging the dynamic agency that has propelled these boats across epochs and along the lifeblood of Egypt—the mighty Nile.

5.2 Exploring Nile Boat Typologies

To navigate the complexities of Nile boat typologies, it is essential to embark on a historical expedition through the medieval periods of Mamluk and Ottoman rule. This journey serves as the genesis, tracing the origins of various boat types and names that echo through the corridors of time. Although the medieval era lacks the abundance of information readily available for the 19th century onwards, it provides the foundational bedrock upon which the subsequent transformations of Nile boats are built etched.

During the Mamluk and Ottoman periods, Egypt emerged as a crucial nexus, directly shaped by the political, economic, and cultural currents of larger kingdoms. The Nile, functioning as a vital thoroughfare between the East and West, acted as a transit zone, facilitating trade, cultural exchanges, and the movement of people and goods. However, the medieval records present a sparse tapestry of information on Nile boats, necessitating a meticulous examination of available resources to unravel the nuances of boat typologies during this era.

The French invasion of 1798 marked a turning point, thrusting the Nile and its maritime elements into the spotlight of Western attention. This newfound focus catalysed Egyptomania and reshaped the trajectory of the country's history. Against this backdrop, this chapter endeavours to establish the foundational framework for understanding the typologies and names of Nile boats during medieval times.

This exploration lays the groundwork for an intricate narrative that extends into the 19th and 20th centuries. Each boat type and name uncovered in the medieval period becomes a thread woven into the broader fabric of Nile boat evolution. The subsequent chapters will unravel the complex changes that transpired over time, ultimately leading to the near extinction of wooden sailboats on the Egyptian Nile.

As the cornerstone of Nile boat typology, this chapter acts as a launching pad for categorisation. It introduces various representations of boats derived from diverse resources, including a comparative analysis of boat descriptions and their visual depictions in photographs. Furthermore, a timeline unfolds, chronicling the appearance, evolution, and disappearance of distinct boat types from the late 18th century through the dynamic shifts of the 19th and 20th centuries, culminating in the present status quo. Within this historical framework, the chapter paves the way for a comprehensive understanding of the intricate interplay between tradition and change that has shaped Nile boats over the years centuries.

5.2.1 Nile Boats in Historical Documentation

The documentation of Nile boats, sheds light on the rich maritime tapestry that once adorned the iconic river. Prior to this era, publications primarily focused on naval history encompassing various periods and regions. However, dedicated studies specifically delving into Nile boats were sparse until 'Abd al-Ḥamīd Sulaymān 's seminal work (2000). His exhaustive exploration, centring on Nile navigation during Ottoman Egypt (1517-1798), sourced data from historical studies and Shariaa Courts in Rasheed and Alexandria, establishing a crucial foundation for the present research.

Agius's (2008)"Classic Ships of Islam" is a noteworthy companion in this scholarly voyage, where glimpses of Nile boat typologies are offered through Islamic and Early Medieval manuscripts. Agius, drawing on the accounts of travellers and historians who ventured into Egypt, contributes additional insights into the diverse array of boats that once graced the Nile's waters.

As we embark on the categorization of Nile boats, an initial division based on function seems logical. However, the nuances embedded in these boats' construction, rigging, and geographical usage introduce layers of complexity. While some boats found purpose in specific categories like cargo transport, passenger conveyance, fishing, and festivities, others transcended these boundaries. For instance, leisure boats were designed with a multi-functional purpose, serving as accommodations for travellers, statesmen, and heads of state. The inherent uniqueness of each boat type, coupled with the owner's desire to imprint individuality, led to significant variations in size, rigging, and appearance, further influenced by geographical location.

The forthcoming section will unravel this intricate web of boat typologies and names, presented in a structured manner categorized by their functions. This exploration aims not only to showcase the diversity of Nile boats but also to capture the essence of their historical, cultural, and functional significance.

5.2.2 Challenges in Categorizing Nile Boats

As we explore the categorisation of Nile boats, an essential aspect is situating each boat type within its geographical context. This contextualisation becomes vital not only for comprehending the boats themselves but also for unravelling the communities that produced them. However, the journey to achieving this understanding is fraught with challenges, adding layers of complexity to the researcher's circumstances task.

Two prominent challenges arise during the exploration of boat typologies. Firstly, the intertwining of boat descriptions in various resources presents a puzzle for researchers. Changes in the original functions of boats, influenced by factors such as the era of use, geographical context, or local

situations, further complicate the categorisation process. The commandeering of people's boats by Egyptian rulers during times of prosperity or war for official state purposes is a notable example of this fluidity in boat functionality.

The second challenge lies in the interplay between boat names and shapes. Agius (2008) aptly expresses the limitations faced by students of material culture when relying on classical and medieval Arabic lexica, highlighting the elusive nature of information on boat types during the Fatimid, Mamluk, and Ottoman periods. The convergence of boat names with changing shapes and functions adds a layer of complexity to the categorization process. The disappointment and puzzlement experienced by researchers in this realm underscore the need for a more nuanced approach.

The decision to focus on boat typologies from the 19th and 20th centuries proves strategic, providing a valuable layer of certainty. The advent of photography in 1839 and its introduction in Egypt in 1840 offers visual resources that enhance our understanding of boat typologies. These photographic records serve as a crucial reference point, providing insights into descriptions offered by different writers. The uniqueness of this research lies in its comprehensive approach, bridging the gap between classical and medieval writings and the photographic evidence of later centuries.

While acknowledging the limitations of 19th-century writers who often compiled classical and medieval texts without extensive explanations or further research, this chapter aims to fill those gaps. Specialized philologists, such as Colin (1920a) and Smith (1868), stand out for their dedicated efforts in providing detailed descriptions of various terminologies.

Nile boats had so many names, both descriptive names and functional names (*ashkyf*, *atfyny*, *jarm*, *ḥarrāqah*, *zuhayry*, *shākhtwrah*, *'ushāry*, *'aqabah*, *ghazāly*, *fulwkah*, *qanjah*, *qayyāsah*, *ma'āsh*, *ma'addyh*, *naqīrah*, *darmwnah*, *dhahabīyah*, *ma'wnah*...) all those names have been cited over and over again in almost all the sources and resources that discussed the Nile since the Mamluk times to the 20th century.

The Earliest representations of Nile boats correlated with its names were in the Piri Reis' map¹ of Cairo and the Nile. Four types of boats were drawn on the map, with a specific name given to

¹ A high quality, free to download copy of the Piri Reis's Book on Navigation, is available for examination online on the Walters Art Museum website: <https://art.thewalters.org/detail/19195/book-on-navigation-2/> This is the 11th century Hejry, 17th AD copy of the expanded version of the 1555 version of the manuscript.

each one of them. This did not happen to any other boat types in the whole manuscript (Figure 51).

The boats are *jarm*, *‘aqabah*, *qayyāsah*, and *shākhtwrah*. Examining the other copies of the manuscripts available for viewing: Istanbul Library (Figure 51), National Library of France (Figure 52), Hagia Sophia Library (Figure 53), and Topkapi Palace Library (Figure 54), three of them include only three types of boats, while one includes four types, like the Walters Museum one. However, each manuscript copy featured a different drawing of the boat rigging. This thesis does not concern itself with the different aspects of drawing or comparing the various copies of the manuscript; rather, it utilises these as a source of information, highlighting the necessity of examining such sources with great caution. This was the reason the researcher chose to utilise photographic archives to interpret and better understand the different typologies and names of the Nile boats.

5.2.3 Categorizing Nile Boats: Working vs. Leisure Boats

A thorough collection of photographs has been compiled to better understand Nile boat typologies, creating a detailed database found in Appendix C. The observations of the researcher, along with historical and archival accounts, form the basis for analyzing these images. This section seeks to clearly differentiate between Working/Cargo boats and Leisure boats, providing a foundation for understanding the changes within these categories in later chapters. This distinction is crucial for revealing the factors that led to the continued use of specific boat types and the decline or disappearance of others by the mid-20th century.

One of the early records that shed light on Nile boat types comes from Clot-Bey's "Aperçu général sur l'Égypte" (1840). As Muḥammad ‘Alī's minister of health, Clot-Bey included a section on the "Navigation of the Nile," delineating various boat types, including *Machs*, *Djermes*, *Daabiehs*, and *Kanges*. Notably, he reported a significant increase in the number of boats since the French expedition, growing from sixteen hundred to three thousand three hundred, with eight hundred being state-owned (Clot-Bey, 1840, p. 417).

Wilkinson's account in 1847 further contributes to the understanding of diverse Nile boat types. In his comprehensive list, he amalgamated various boats observed in Egypt, encompassing the *djerm (germ)*, *maadil*, *aggub (akkub)*, *mash or rahleh*, *dahabeeh*, *cangia (kangeh)*, *Kyas (Kyaseh)*, *Sandal*, *sefeenee*, *garib (Karib)*, and *maadeeh* (Wilkinson, 1843, p. 124). These early records provide a glimpse into the diversity and prevalence of Nile boats during the 19th century.

As we delve deeper into the categorization and exploration of specific boat types, the aim is to dissect their roles, construction, and adaptation over time. By distinguishing between working and leisure boats, we embark on a journey to uncover the nuanced dynamics that shaped the fate of these vessels along the Nile.

5.3 Working boats

The term "Working Boats," as used in this section, is a deliberate choice to encapsulate the diverse fleet of vessels that served as the backbone of Nile navigation. This inclusive terminology aims to highlight the multifaceted nature of these boats, where functionality intertwines seamlessly, reflecting the adaptive spirit of maritime life on the Nile.

Within the realm of working boats, functions are not neatly compartmentalised; rather, they form a dynamic tapestry in which boats are versatile in their utility. A fishing boat, for instance, might seamlessly transition into a cargo carrier for fresh produce, shuttling goods between villages along the banks of the Nile. Similarly, a boat designed for ferrying passengers might, on occasion, carry cargo or transform into a vessel for leisurely activities pursuits.

The flexibility of these boats extends even to times of conflict. In wartime, vessels accustomed to transporting tons of cargo may be repurposed as naval auxiliary boats or serve as ship's boats tasked with conveying crucial ammunition and supplies for the navy. This adaptive quality is a testament to the inherent versatility of Nile working boats, embodying the resilience needed to navigate the river's ever-changing demands.

The following list introduces a selection of boat types, collectively representing the diverse working force on the River Nile. Used by both the public and the government, these boats were the unsung heroes of daily life, contributing to nearly every activity on the Nile. As we explore each boat type, the nuances of their design, functions, and geographical contexts will unfold, providing a comprehensive understanding of their role in shaping the vibrant tapestry of the Nile navigation.

5.3.1 'aqabah

This boat type used was mentioned in the sources dating back to the Mamluk period (Bauden, 2015, pp. 100–129). The boat was not extensively described in Mamluk era text, but it was included in the official hiring contracts of Nile boats. The resources state that it was used for carrying cargo and transporting passengers between *Fwwah*, in the delta, and *Bulaq*, the main port of Cairo (al-Nakhīlī, 1979, p. 187; Bauden, 2015, pp. 111–112). Al-Nakhīlī (1979, p. 187)

compared this type with the *'ushāry*, both in shape and function. However, he continues that it was used as both a cargo and leisure boat.

The *'aqabah*, a distinctive type of boat mentioned by al-Asyūṭī in the 9th century Hijri, holds a unique position among the diverse vessels navigating the Nile. According to historical accounts, it was primarily utilized for transporting stones and was characterized by its singular feature—a square sail. Wilkinson (1854) and Folkard (1870) also corroborate this description, emphasizing the boat's exceptional use in carrying stone and its square sail. However, this is one of the types of boats that I could not find any photographs for.

The term *'aqabah*, “meaning the obstacle in Arabic” is not without variations in its depiction. Rifaud (1830) illustrated a boat type labelled "*hagab*," featuring a square sail and appearing to have a high edge. Clarke (1920), however, contested the continued existence of square sails on boats during his time (1917). Drawing arguments from old manuscripts and accounts of travellers dating back to the 18th century, Clarke questioned the persistence of this sail type.

Murray (1873) distinguished between Ethiopian and Egyptian square sails in the 19th century. They noted that Ethiopia retained the square sail, which was furled by forcibly rolling up the lower yard within the sail. In Egypt, the square sail was limited to a specific type of boat used for transporting stones from quarries to locations such as Cairo, featuring only a yard at the top (Wilkinson, 1854, p. 126; Murray, 1873, p. 126).

James Hornell's exploration in the 19th century traced these square-sail boats further south of the fifth cataract. Describing them as fishing and ferry boats, Hornell noted the use of a light square sail. Between the fourth and second cataracts, the sails took on a more oblong shape.

Lane (1842) contributed to the understanding of the term "*'ajūb*" (Lane, 1842, p. 459) in the footnote he states the following "*Akab is the general name of the largest kind of the boats which navigate the Nile; and " 'akabeh " (plural " 'akabat "), the name of a single boat of this kind"*. This insight adds linguistic context to the boat type, emphasizing its significance among the various vessels plying the waters of the Nile during this period.

5.3.2 Jirm

There are a number of spelling variation, which includes "*jirm, djerms, jarm, and germ*". The origins of *jirm*, according to Greenhill (2001: 173), can be traced back as early as the 7th century. al-Maqrīzī, in documenting the reign of al-Zāhir Baybars (1259-1277), notes an interesting historical development where the mouth of the river at Damietta was deliberately obstructed to impede the passage of crusader ships. This obstruction persisted, preventing large ships from

entering the Nile during al-Maqrīzī's time. To address this, a specific type of boat, referred to as *jarm* (plural *jurum*), was utilized to transfer cargo from larger ships into the river mouth (Cooper, 2012). Piri Reis (1470-1553) captured the essence of these boats in his Cairo manuscript, referring to them as "*jereme*" and illustrating both single-masted and triple-masted variations (Figure 56).

The consensus among various sources confirms that *jirms* were the largest type of boat navigating the Nile. These flat, broad vessels lacked cabins or superstructures, akin to lighter boats in Europe. They exhibited a relatively shallow draft compared to other boats of similar tonnage, featuring fine lines, a long overhanging bow, rounded stern, washboards amidships, and flat floors. Fitted with lateen sails and equipped with 2 or 3 masts, these boats boasted a capacity of 200 tons, facilitating the transportation of cargo from Rosetta to Alexandria by crossing the perilous bar at the Nile's mouth and venturing into the open sea. Primarily used during the inundation or between Alexandria, Rosetta, and other Mediterranean ports, *jirms* played a crucial role in maritime trade.

Clot Bey (Clot-Bey 1840: 450) provided a detailed description, noting their smaller size compared to *Maachs* and their role in transporting goods, primarily navigating two branches of the Nile, and making voyages from Alexandria to Rosetta, Damietta, and occasionally to Cyprus and Syria.

Breene (2018) sheds light on the auxiliary use of *jirms* in the eastern Mediterranean battles. references reports from 1798 indicating that around 100 *jirms* were operational between Alexandria and Rosetta, further noting their capability to sail to Syrian ports. The reported lengths of these boats ranged from 15 to 21 meters (Clot-Bey, 1840, p. 450; Wilkinson, 1854, p. 124; al-Nakhīlī, 1979, p. 22; Greenhill, 2001, p. 173). This historical and structural information provides a comprehensive understanding of the prominent role played by *jirms* in Nile navigation during different periods.

Regrettably, no photographic evidence of *jirms* has been found to date. Nevertheless, numerous written accounts by various authors corroborate the existence and significance of this boat type. Two drawings by French artists, André Dutertre (1809) and J.J. Baugean (1819), offer visual representations (Figure 63 and Figure 64, respectively) that align with most written descriptions. The absence of detailed attention to Nile boat types in the drawings of the French savants in the late 18th century leaves room for speculation about the potential richness such visual records could have added to the Description of Egypt, prompting contemplation on how the publication might have appeared with photographic plates instead of drawings and lithographs.

5.3.3 Qayyāsah

The *qayyāsah* stands out as a prominent working boat on the Nile, distinguished by its capacity for transporting bulk cargoes and its ability to navigate year-round, even during the low Nile. The earliest Arabic references to the name *qayyāsah* can be traced back to al-Maqrīzī and Ibn Taghry, documenting events in the year 707 Hijrī (1307-08). However, during this period, the *qayyāsah* was identified as a ship primarily utilized for sailing to Yemen.

A pivotal depiction of the *qayyāsah* emerges in Piri Ries's map of the Nile in Cairo, created during his visit to Egypt between 1516 and 1517. The map showcases an illustration of a boat named *qayyāsah*, a visual element consistent across all copies of the Kitabi Bahari (Figure 57).

In his comprehensive study, Sulaymān (2000, pp. 38-41) gathered information on various boat names, dimensions, and capacities from *al-Maḥākīm al-shar'īyah* (Sharia Courts) documents. However, the categorization becomes intricate, introducing four distinct variations of the *qayyāsah* — *qayyāsah ters*, *qayyāsah senna*, and *qayyāsah ghazāly*. Sulaymān's descriptions of the differences between these variations are briefly outlined in the appendix of boat types within his book (Sulaymān, 2000, pp. 185-190), albeit with some ambiguity.

The generic term used to describe the boats is *markeb* pl. *marakeb*. Usually, however, this name is applied especially to large two- or three-masted commercial boats, the medium-sized one- or two-masted barque being called "*qayyasa*, pl. *qawawis*." (Colin, 1920a, p. 75).

The *qayyāsah* was a wall-sided barge in build, flat-bottomed boat with a lofty and extravagant-looking stem post. Bottom planks brought up about halfway up the stern, keel at ends only—bow blunt to almost flat; generally, a slight sheer at the bow. Sides flared; flat sheer and low freeboard (H. Smyth, 1906, p. 290; Kelly, 1906, p. 37). Maximum beam well forward tapers aft to a transom stern. The keel protrudes forward as well as aft and gradually runs into the hull amidship. This shape of the keel was to protect the hull when the boat is grounded, and it helps in releasing the boat from the muddy banks of the Nile. (H. W. Smyth, 1906, p. 290; Kelly, 1906, p. 37; al-Nakhīlī, 1979, p. 22; Greenhill, 2001, p. 230)

Most of the *qayyāsah* have two sails, sometimes three; most have steps on the side to enable the crew to climb the masts. Lateen sails; the trinket, foresail is racked forward and located in the prow of the boat. And the mainsail is located at the aft of the boat. The exceedingly long main yard is in 3 pieces, lashed together. The high point of the bow holds the lifting tackle. They also poled or rowed (Greenhill 2001: 230; Smyth 1906: 290). According to Sulaymān (2006, pp. 38-39), capacities vary between 10 to 90 tons. While Colin (1920a, p. 75) list the lengths to capacity ratio

of these boats, a boat of 20 to 22 meters in length can carry 100 to 120 tons, while boats of 12 to 14 meters in length could carry 50 to 70 tons (Figure 69, Figure 70, Figure 71).

According to the French expedition' writers (Description de l'Egypt: Etat Modern), edited by Jomard (1809: 123) under the title *kayasse*, "people still include boats of 300 and 400 ardebs; it was not possible to distinguish more than has been done in this table, the different species of these boats also called 'kayasse, any boat which has no room." Also reported dimensions by the French are between 5.8 to 16.7m in length and 2.1 to 5.6m in width, and it can carry up to 200 tons of goods.

5.3.4 Ma'āsh

The writers of Description de l'Egypt agree with Clot-Bey on the name. In the Volume "Etat Modern" there is a collective table of all boat names, dimensions, propulsion, tonnage, and months of navigation on the Nile; it states that a Grand *Mâch* is a "Kangeh-kebyr" a big Kangeh and it was used in upper Egypt. This type of boat can carry up to 60 tons.

It was also mentioned once by al-Jabarti, during his account of the month Rabie Alawal 1221 Hejri – 1806-1807 AD "... the boats named *Maashat*, bringing passengers and cargoes of the merchantmen to the dam, then it was anchored there, then all the cargo were transported by land into other boats and vessels that are used to transport stone, and these boats carry it to the coast of Bulaq to discharge its cargo, and each boat then go back to its original function..."

According to (Sulaymān 1996, p. 189) *ma'āsh*, pl *ma'āshāt*, is a grand boat type, with two to three masts, carrying lateen sails, used initially to carry cereals and other cargoes, and later was converted into passenger transportation, and a cabin was added for the living of long-distance passengers. An that there was a dedicated transportation line between Damietta and Cairo to transport passengers from Damietta every Monday and Thursday.

Clot-Bey (1840, p. 450) and Colin (1920, p. 76) were among the resources who stated that this type of boat was used for transporting goods, while other resources mentioned that it was used as a passenger boat. Also, the writers of Description de l'Egypt agree with Clot-Bey on the name. In the Volume "Etat Moderne", there is a collective table of all boat names, dimensions, propulsion, carriage and months of navigation on the Nile; it states that a Grand *Mâch* is a "Kangeh-kebyr" a big Kangeh and it was used in upper Egypt.

Clot-Bey (1840, p. 450) describe the *ma'āsh* as boats used mainly to transport bulky goods such as cotton, wheat, etc. These boats are as big as ordinary commercial vessels; some can contain up to 500 tons. They have two or three masts and lateen sails. They only sail in time of inundation. They

make two trips per year. However, according to *Description de l’Egypt* this kind of boat could carry up to 60 tons only, and Colin (1920, p. 76) states that this type of small boat carries fruits and vegetables.

5.3.5 Shakhtūrah

According to Sulaymān (2000, p. 186), this boat was a cargo boat working on the Mediterranean waters and the Nile. The Nile type was called *shakhtūrah banawany*, which was a smaller version of the sea-going boat. It also had a single sail. Sulaymān doesn’t go into details about the type of sail. However, he mentions that the mast was a single piece, and the sail was tied up. This might be a reasonable explanation about the square rigging which appeared on this type of boat on Piri Reis’s map (Figure 57). A similar sail configuration was found on the Nile (Figure 58) and more extensively on the southern border of Nubia and northern Sudan.

This description coincides with other historical writers such as al-Nuwayrī al-Sakandarī and al-Bustānī where they both – according to Al-Nakhīlī (1979, pp. 74-75) – describe this boat as a single-masted boat that was used as a ferry during the inundation of the Nile. It was also used as a fishing boat. The other use of the boat was leisure, especially in the lakes of Cairo that was formed by the inundation of the Nile. According to the historical resources, this type of boat was also used elsewhere in the Mediterranean and Iraq for the same purposes.

This type of boat was drawn on the manuscript of Piri Reis. The drawing of a big boat with a square sail and two oars on the sides, fully laden with what appears to be stone blocks. The *shakhtūr* was a type of Ottoman naval boat used as an auxiliary boat to bring munitions and cargo for the fleet, pl shkhātyr.

5.3.6 Mi’addyah

Term for a Ferryboat. Most are still being built of wood, but steel hulls are becoming more common. Many still sail, but some are built with a steel hull and sometimes is equipped with diesel engines (Greenhill, 2001, p. 369) (Figure 65). *mi’addyah* have different shapes and sizes. However, they all have the same function: transporting people, cargo, and livestock between the river’s banks. This type of Nile boat has fixed anchorage points on the riverbank and was used for a specific stretch of the Nile. *Mi’addyahs* usually have only one sail towards the bow, making it easy to be sailed by just one crew member (Colin, 1920, p. 75).

5.3.7 Ma'ūnah

Both Colin (1920, p. 75) and Greenhill (2001, p. 371) agree that this type of boat is a big cabotage boat on the coast of the Delta, in the port of Alexandria and the Maḥmūdīyah canal².

5.3.8 Naqr

Colin (1920, p. 75) discuss the different names of generic boat names on the Nile and describe the *naqyrah* as any three-masted sailing boat. On the other hand, Clark (1920, p. 5) describes the “*naggr*” as the typical type of native-built boat, with no frames and the beam's width often approximating half its length. The bottom is curved, the sides continuing the same curve. These boats range in size from small feluccas to large crafts, such as 75 tons (Figure 66). “*It was constructed of stout baulks of sunt, or heavy Acacia nilotica, joint together by long iron nails clinched on the outsides. The rig is a single balance-lug with a boom along the foot, which is set to top the sail's leach up in the air. The lateen is rarely used as yet, although coming into favour. In default, the masts, yards, and booms are generally of Kakamut wood from the upper Nile. These boats are all sizes - from thirty feet upwards - and have the heavy gaiassa form of rudder*” (Smyth, 1906, pp. 296-298) (Figure 67, Figure 68).

² This term is still in use until today in Alexandria, when describing tender boats that help in loading and off-loading of cargo ships.

5.4 Leisure boats

Leisure boats during the Mamluk and Ottoman periods were exclusively reserved for the enjoyment of Sultans, Princes, and men of state during official inaugurations and celebrations of the Nile's inundation. Historical sources provide detailed insights into various leisure boat types specially crafted for the Sultan, while additional boat varieties catered to the aristocracy.

Despite the prevalent use of sailboats on the Nile for transporting goods and people, another distinct category emerged boats designed exclusively for passengers, primarily European travellers. These included the dhahabīyah and qanjah, specifically tailored for river travel and equipped with cabins (Wilkinson, 1847, p. 124). These boats were available for hire at Cairo's primary Nile-port, Boulaq, with rental rates ranging from 1000 to 8000 piasters per month (Wilkinson, 1847, p. 124). Described as the port of Cairo, Boulaq was a bustling hub with boat builders, warehouses, and granaries lining its banks, where boats were commonly rented at fixed rates per month (Fairholt, 1862, p. 77).

“Boulaq is the port of Cairo... There is a busy line of boat builders constantly occupied on its bank; it abounds with warehouses and granaries...Boats are generally hired at Boulaq (where their builders live) at certain rates per mouth” (Fairholt, 1862, p. 77).

5.4.1 ‘aqabah

On Pirie Reis's manuscript of Cairo and the Nile, he draws four types of boats and wrote the names of each boat under it to differentiate it. An altogether special case is the chart of the Nile at the level of Cairo. Piri Reis must have been fascinated by the various boats he saw on the river, for he included drawings of four types, all of them known by name from Arabic sources: jarim, ‘aqabah, qiyasah and shahtur. This instance of four types of vessel being both named and drawn by a contemporary witness may well be unique.

The Aqabah is, as it looks, is a type of cabin boat; this drawing fits with other descriptions of mediaeval historians and writers of the type Ushari, as its drawing fits with the descriptions discussed by Agius (2008, pp. 301-303) and al-Nakhīlī (1979, pp. 95-97), who both discuss the exact source of information. Abd al-Latif al-Baghdadi describes the Ushari that the Sultan used, and it was a boat with a domed cabin that looks like the drawing of Piri Reis (Figure 59).

According to Bauden (2015, pp. 100-129) after, Kindermann (1934, pp. 66–67), and Colin (1920, p. 79) discuss that the word Aqaba was designated to a large boat and that the traveller Vincent Stochove described it in 1631: "The rich have express boats which serve only for this celebration public [the flood of the Nile], and call them Achaba, they are flat, the stern in includes more of the

middle, it is square and surrounded by balusters so that those who eat them do not inconvenience the people who sit in them, they are covered with beautiful and rich Persian rugs from below, and the top covered with oilcloth, inside painted and diversified by different kinds of colours, so it's like a nice room." The boat in question was short and flat but broad, with a square sail attached to a central mast. A castle or fittings occupied the stern; a large room was furnished with rugs and fabrics.

There is an increase in the use of this name in resources that talks about the same type of boats during the 19th century and that the Pasha used it during the celebrations of the inundation of the Nile as will be discussed in the next section of this chapter.

Colin (1920, pp. 78-79) includes some accounts about Aqaba's use during the ceremony of the opening of the dam or the famous Khalig in Cairo, which remained the custom tradition of all Egyptian rulers until the end of the Egyptian kingdom in 1951 (Figure 72, Figure 73). He quote al-Jabartī's description of the boat *"The boat called Aqaba is reserved for the use of Pacha; it is constituted by a barque of commerce that is taken by force from its owners; it is painted and decorated in different ways, and then a cabin or a maqaad of worked wood is installed, the windows of which are fitted with turned wooden screens; above it, there are multicoloured streamers and ornamented tufts; the cabin is covered with yellow copper leaves and embellished with illuminations and hangings."*

Another description of the same name was described by Edward Lane (Lane, 1842, pp. 456–459) when he was talking about "The period when the Wefa en-Neel is proclaimed" he mentions a boat used in the festivals of the completion of the Nile he called it "Akabeh" and describe it as a colossal boat painted specially for the occasion, and had two small cannons on board, and was glittered with a large number of lamps. It was a cabin boat, which had a pavilion composed of pieces of silk over it and was adorned with two pennants. And that it was used during the Ottoman period as a boat, particularly the Wali and other state officials (Lane, 1842, p. 459; al-Manāwī, 1966, p. 199)

5.4.2 Dhahabīyah

Al-Qalqashandī mentions that, during the celebrations of the inundation of the Nile River, the Sultan would be riding a boat from the type called (*Harraqa*), also known as (*Dahabiya*)³. Also, al-Jabartī mentioned the type of boat Dahabeah used by the statesmen, and he also used the word

³ *Ḥrāqḥ al-Sulṭān al-'Uẓmá al-ma'rūfah bāldhḥbyh*

(*Canja*) to describe the same type of boat without giving more details. Colin (1920, pp. 77-79) included different sources and eyewitnesses who have described this type of royal Nile boat, including Abd al-Latif, a medicine man from the 13th century who admires the Golden Boats of the Nile. This also coincides with what al-Maqrīzī described as the boats of the Khalifate, and that the big royal boats called *'ushāry*, and it included 6 types according to their colour, one of them is the *Golden 'ushāry*.

Currently, the name *dhahabīyah* is given to luxurious Nile cruises, which travel the Nile from Cairo up to Lake Nasser, but in the old days, it was a beautiful double-masted wooden boat with a large cabin in the aft.

The reported lengths of the *dhahabīyah* are 12, 15, 30, and 55 meters long, with a slim width between 4 and 5 meters only. They are equipped with 2 lateen sails; the large mast and lateen yard are fixed towards the boat's bow, the smaller one in the stern. Oars were used in this type of boat. The number of men and oars are equal; reported oar numbers are 12, 18 and 20, and a number of long poles for pushing off from the sand-banks. They have 2, 3 or 4 rooms for travellers in the rear. A small rowboat was towed to the big boat to be used when needed. (Clot-Bey, 1840, pp. 450–451; Fairholt, 1862, p. 79; Carey, 1863, p. 80; Folkard, 1870, p. 14; Laporte, 1872, p. 7; Lynch, 1890, p. 170; Manning, 1891, p. 67) (Figure 77).

The only writer who stated that it was used to transport goods when the Nile waters are low was Clot-Bey (Clot-Bey 1840: 450). Other travellers only write about it as the primary and most comfortable means of transport to go up the Nile and back again.

Sir Gardner Wilkinson (1847, p. 124) compares the *dhahabīyah* and *qanjah*: "*The Dahabeeh is, however, the larger and more commodious of the two*" (Figure 78, Figure 79). Sir Wilkinson also describes the *dhahabīyah* in full detail, stating that it was furnished with a gangway on each side of the cabin, extending to the steerage, it had a rounded stern. He was admired by the enormous foresail, which was attached to a very long tapering yard, in some of the boats upwards of one hundred feet in length, thick at the lower end, but gradually diminishing to a slender substance at the peak, or upper end. "*Going up the Nile, both sails were sat up, when the wind is suitable; but on coming down, they stow away the main-mast and shift the mizzen-sail to the main-mast, and so drift steadily down with the current*" (Wilkinson, 1847, p. 124).

A large water filter with a wooden frame usually occupies the centre of the main deck. The bulwarks are very low, about 15 cm in height above the level of the deck. The stern is much higher out of the water than the forepart, and the rudders are very large and powerful (Wilkinson, 1843, p. 124; Fairholt, 1862, p. 80; Manning, 1891, p. 67) (Figure 80). The keel was of concave form,

being most profound at the stem and stern, whilst there is scarcely any keel at all amidships; the advantage of which is, that; when they get aground forward, by putting the helm to port or starboard, the hollow part clears the bank, and enables the boat to get off immediately (Wilkinson, 1847, pp. 124) (Figure 81, Figure 82).

5.4.3 Ḥarrāqah

Ḥarrāqah is from the word (burner) in Arabic or a flame-throwing boat. And the sources agree that it was used mainly in the navy. However, this type of boat has another function, mainly a leisure boat used on the Nile during the Mamluk era. According to Colin (1920, p. 78), after al-Qalqashandī, the *Ḥarrāqah* is the Soltan's own great *Ḥarrāqah*, also known as *dhahabīyah*.

5.4.4 Qanjah

According to the description of Egypt, there were three types of qanjah, which are boats used in Upper Egypt; each type depends on its capacity and dimensions. The Kangeh-kebyr refers to the Grande Mach, Nousf-kangeh means Demi-Mach, and Kangeh-Sougayar. From the writings, one could argue that the Maash type of boat, initially merely a cargo vessel, was later equipped for passengers and subsequently developed into a fully dependent boat specifically used by travellers on the Nile during the 18th and 19th centuries. One notable example is James Bruce's travels in Egypt in 1790; on his journey to discover the source of the Nile, he rented a qanjah, which he describes as "... one of the most commodious used in any river... 100 feet from stern to stem, with two sails, main and foremast, and two enormous Latin sails: the main-sail yard being about 200 feet in length." He continues to describe the structure of the vessel, including its keel, beam, and cabin. It is worth noting that the drawings Bruce included in his publications (1790, Vol I, pp. 43-44) depict a European-shaped boat, with all evidence of this type of boat's shape before the invention of photography in the 1830s relying on various drawings by Orientalists who visited Egypt. In Bruce's drawings, the boat features two sails in the forward half, with the mainsail midship and a trinket sail rigging forward at the bow. However, this rigging configuration differs from the sail arrangement of the same type of boat in the 19th century (Figure 59).

Clot-Bey (1840, p. 451) describes the *Kanges* as Egypt's gondolas and that they are slender and elegant, fast and lightweight. Sizes vary from 9 to 12 meters long and 2.5 to 3 meters in width. They might have one or two masts with lateen sails, very picturesque in appearance, and admirably well adapted to make the most of the wind; there is but one objection to them, they require constant attention and excellent management, without which one runs the most significant risk of capsizing by the sudden squalls which come down from the mountains (Bartlett

Chapter 5

1851: 124-5). It has a cabin aft divided into two rooms which are painted and decorated, but even in the smallest, they did not extend over the whole breadth of the boat and merely occupied the centre. The after-cabin and passage served as deposits for stores and a washing-room (Bartlett, 1850, pp. 124–125; Wilkinson, 1854, p. 126). These boats were very fast that Clot-Bey (Clot-Bey, 1840, p. 451) argues that it takes 24 hours to get from Alexandria to Cairo (Figure 74, Figure 75, Figure 76).

5.4.5 'ushāry

It was the gondola of the Nile, and it is another type of royal boat similar to the *Harraqa*. al-Maqrīzī describes the elegance and beauty of this type of boat, elaborating on the description of its octagonal cabin that carries a doom, which again could be related to the Aqaba type.

Also, al-Maqrīzī describes that each 'ushāry type have its own name according to its colour, so there were the Silver, Copper, Golden, Red, Lazordy, and Sicilian. The 'ushāry remained in use during the Mamluk period under the name *Hrraqa*, and the Golden *Harraqa* or *dhahabīyah* was a specific type of boat that the Sultan only used for the ceremonies of the Nile inundation.

5.5 Chapter Five Figures



Figure 51: Piri Reis' Book on Navigation, the page including a map of the city of Cairo (Misr). from Walters Museum. The drawing includes four significant drawings of different Nile boats. Date is probably 17th century. Walters Museum of Art W.658.305A.

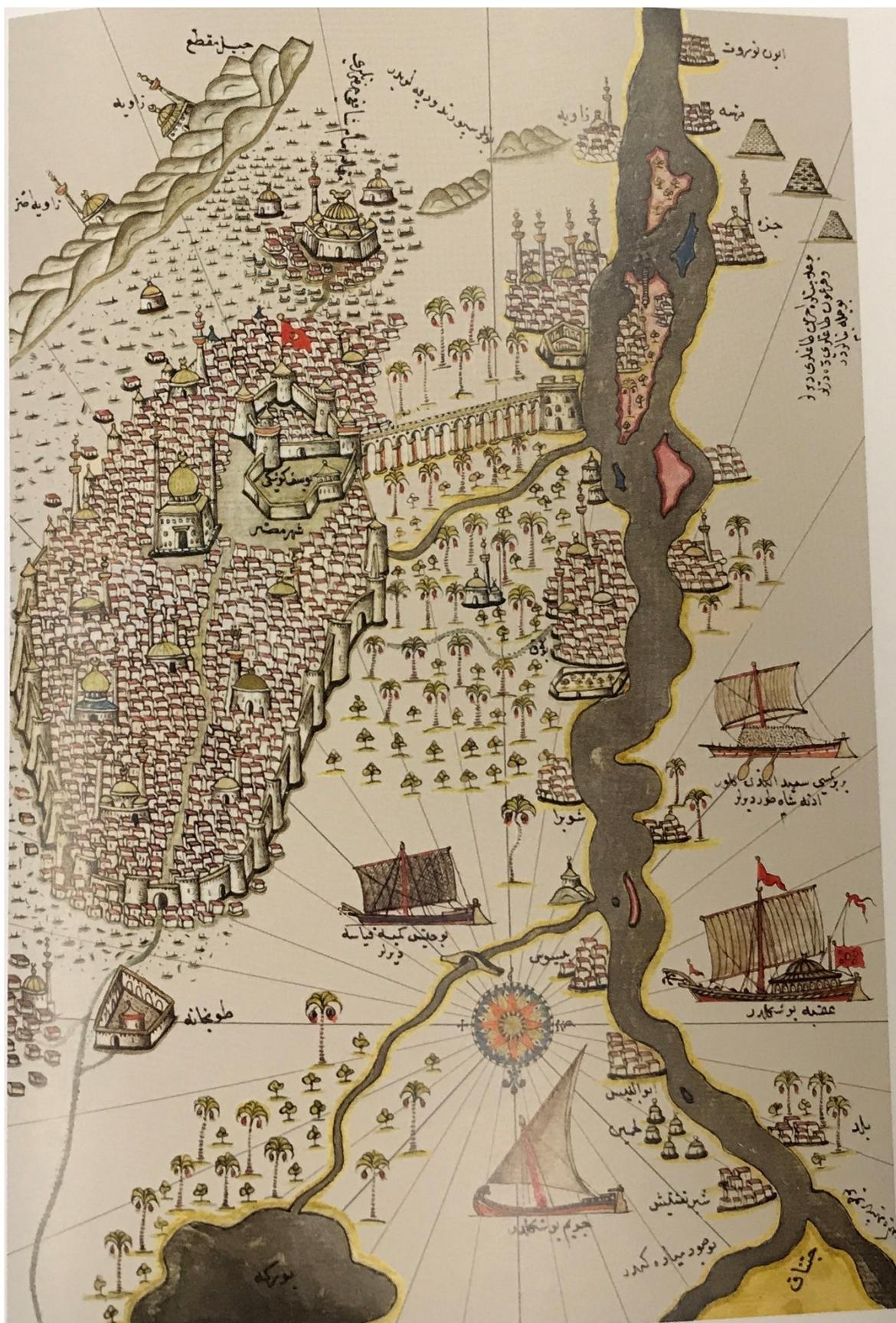


Figure 52: University of Istanbul library copy dates to 16th century, showing 4 different types of Nile boats. After Özukan 2013: 225.



Source gallica.bnf.fr / . Supplément turc 956

Figure 53: National Library of France 1550-1599 copy, showing only three types of Nile boats, but there is a boat drawing that was scratched.



Figure 54: The 1526 Ayasofya Library copy, showing only three types of Nile boats.

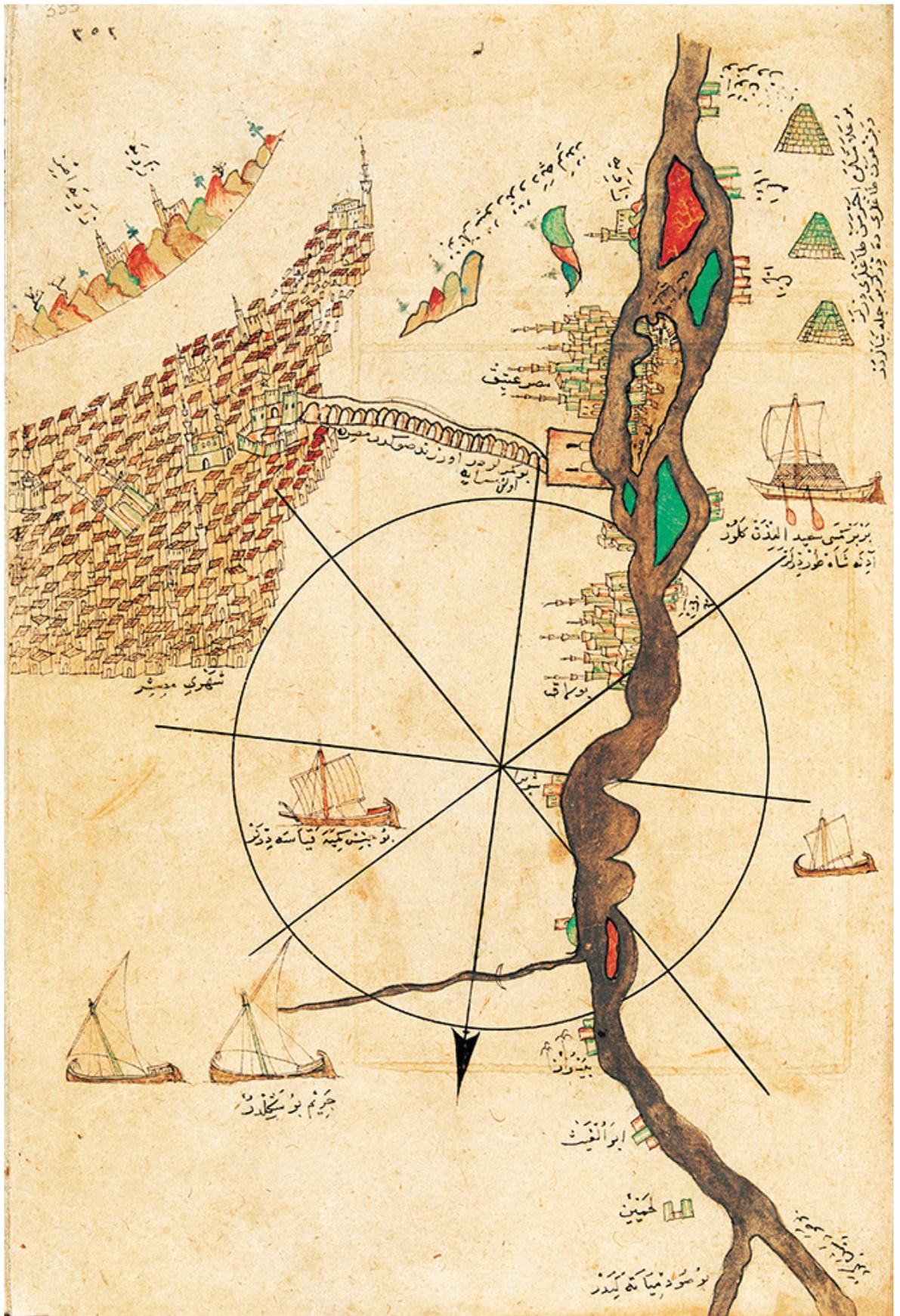


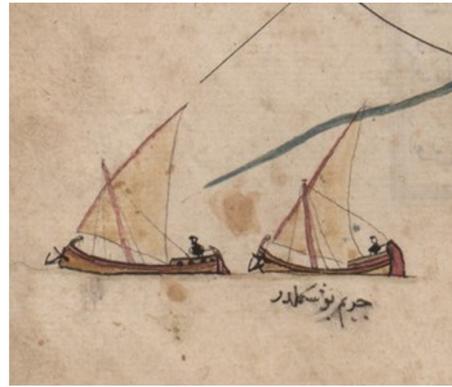
Figure 55: The Topkapi Sarayi copy of 1526, showing only three types of Nile boats.



A: Walters
17th Century



B: Istanbul
16th Century



C: French National Library
1550-1599

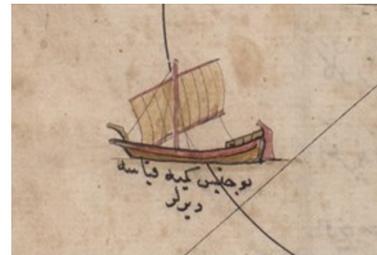
Figure 56: The Jarm or Jereme type of Nile boat and the different appearances on three copies of the Piri Ries Book on Navigation.



A: Walters
17th Century



B: Istanbul
16th Century



C: French National Library
1550-1599

Figure 57: Qyassa with square sail on all different copies of Kitabi Bahari.



A: Walters
17th Century



B: Istanbul
16th Century

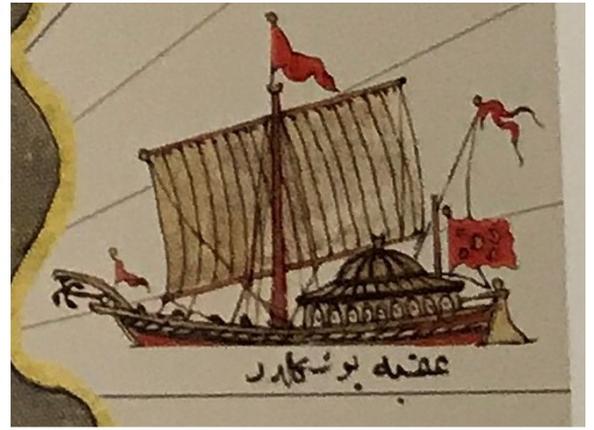


C: French National Library
1550-1599

Figure 58: Shakhtur boat type as appeared on the different copies of Piri Ries' manuscript.



A: Walters
17th Century



B: Istanbul
16th Century

Figure 59: The Aqaba appears only on more modern manuscripts of Kitabi Bahari.

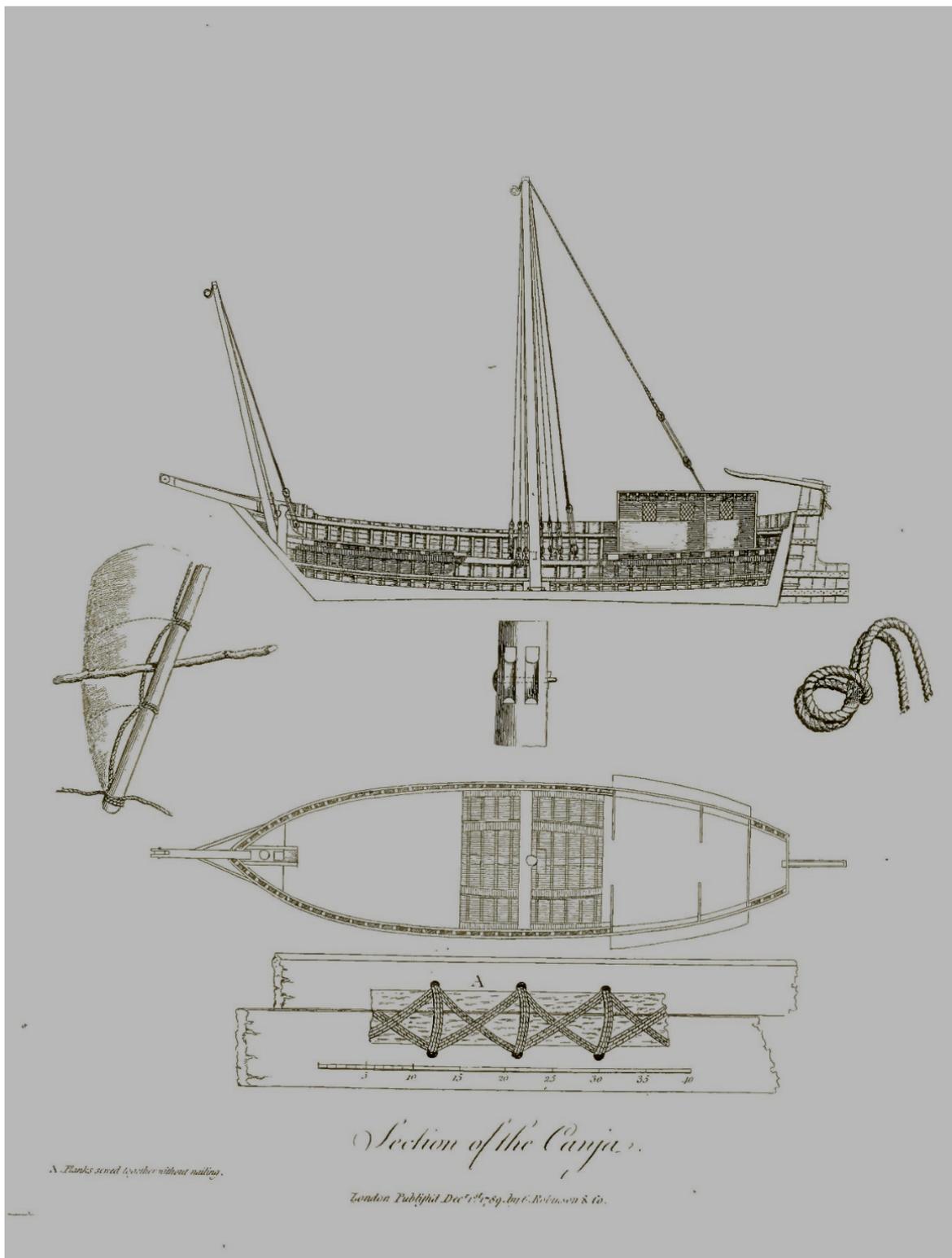


Figure 60: Bruce's boat with inscription "Section of the Canja; London Publish'd Decr. 1st. 1789. by G. Robinson & Co.". Other illustrations in the plate were about the boatbuilding methodology of the Red Sea boats "Planks sewed together without nails".

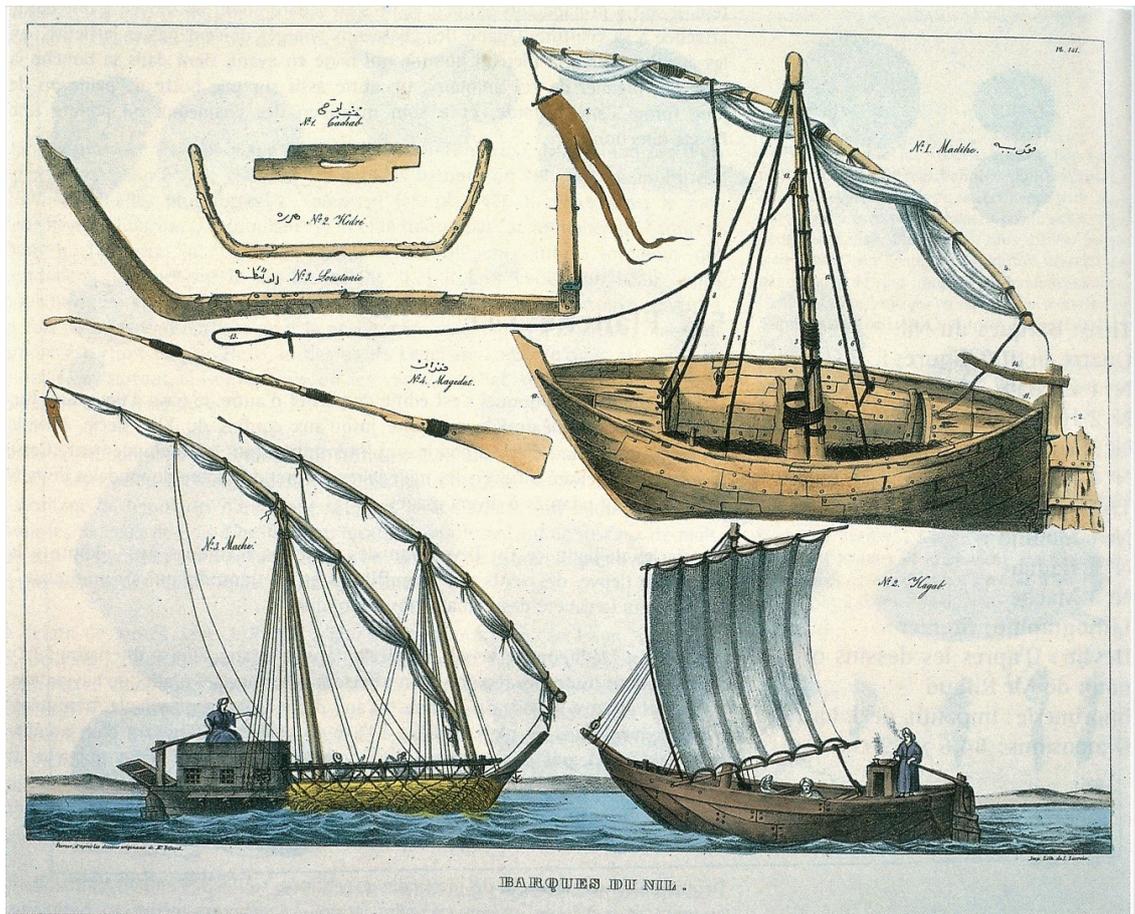


Figure 61: Nile boats according to J. J. Rifaud in 1827. Bottom right is the boat type names Aqaba, with a full square sail.



Figure 62: A Dongola Markab undersail. After Hornell 1970, Plate XXXV A.

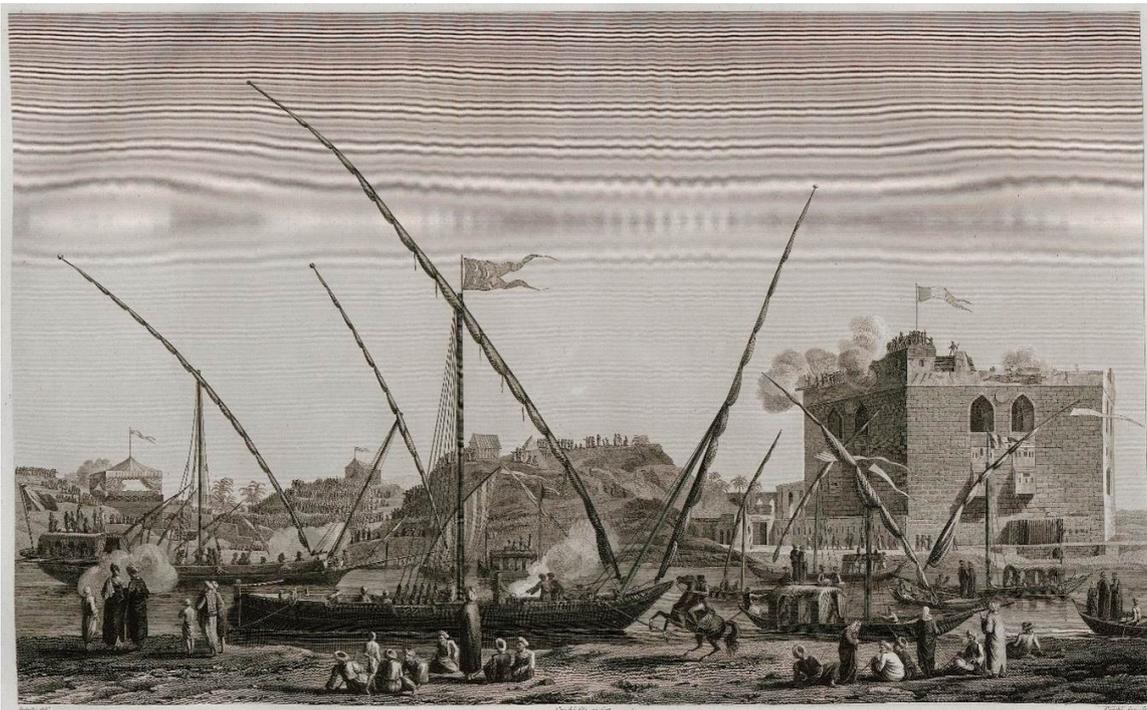


Figure 63: Djerme on the Nile during the celebration of the cut of the canal in Cairo, drawing by André Dutertre.

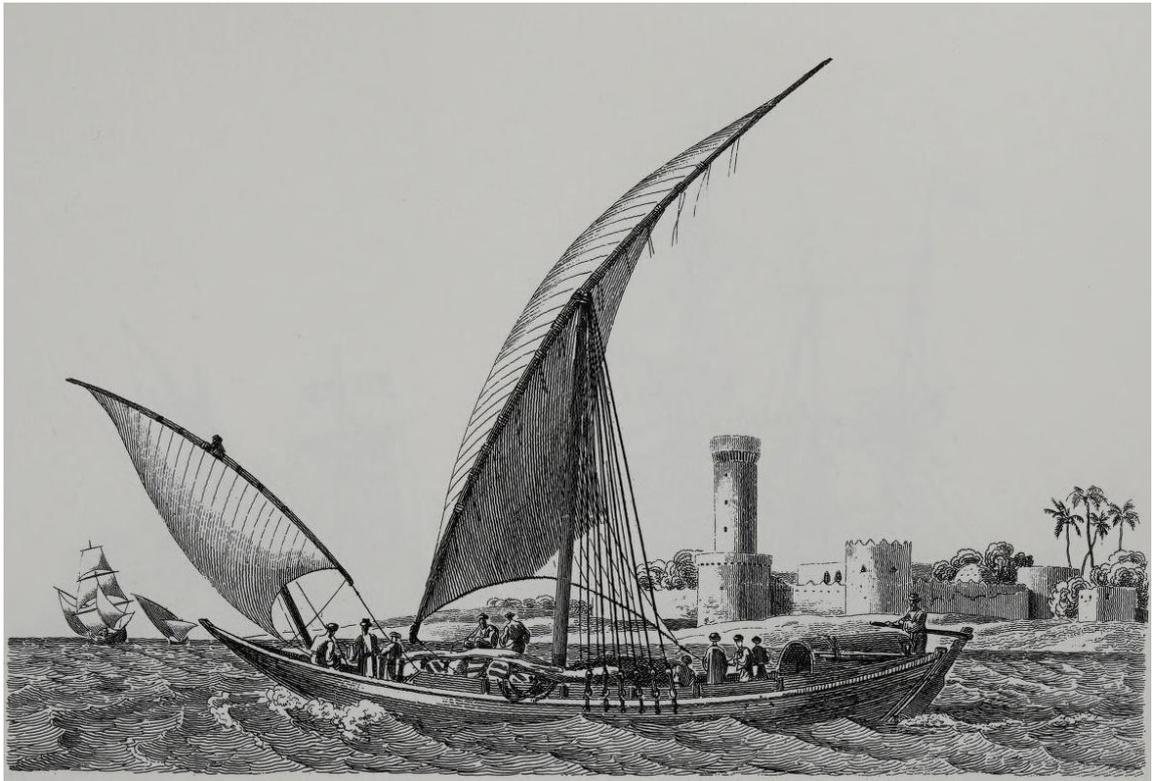


Figure 64: J J Bugean drawing of a "Turkish Djerme of Alexandria" after Harland (2000: 125).



Figure 65: Ma'addiyya in Cairo 1908. AKGimages. AKG1777702.



Figure 66: A large Nuggar at Omdurman, after Hornell 1970, Plate XXXVI A.



Figure 67: A Nuggar or "Sudan. Khartoum. Native craft on the Blue Nile". Photograph by Matson Photo Service 1936. Library of Congress Prints and Photographs Division. Part of: G. Eric and Edith Matson Photograph Collection.



Figure 68: A Nuggar or "Sudan. Omdurman. Native craft along shores of White Nile". Photograph by Matson Photo Service 1936. Library of Congress Prints and Photographs Division. Part of: G. Eric and Edith Matson Photograph Collection.



Figure 69: Single Masted Qyassa at El Kanater Barrage. Cairo, Egypt. Photograph by Eliot Elisofon 1959, The Smithsonian Institute Research Information System.



Figure 70: Double-masted Qyassa sailing near Cairo, Photograph by Major J. M. Rose, 1st NZEF 1914-1915. Museum of New Zealand.



Figure 71: Three-masted Qyassa, 1900. Photograph by Leon and Levy. Europeana.

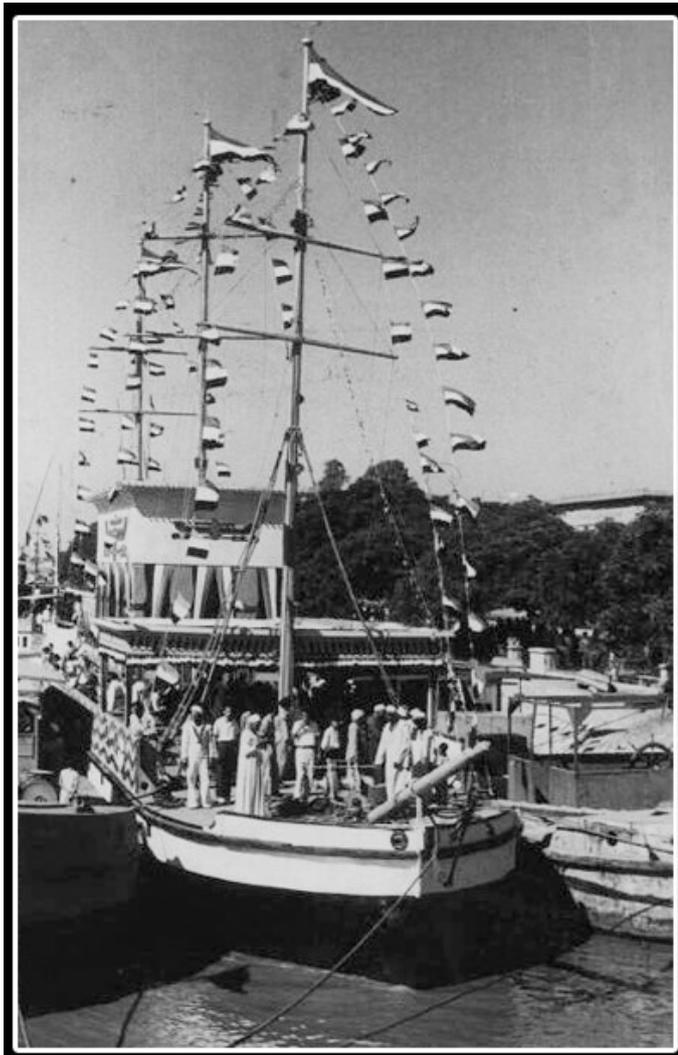


Figure 72: The Nile Flood Festival, Al-Aqaba boat sailing in celebration of Nile Flood 1937, Source Ahram Digital Content Project.



Figure 73: Nile Flood Ceremonial Festival Egypt 1923. From Monarchy and Dynasty page on Facebook.



Figure 74: View of north Aswan filled with Canjas moored at the river bank. Photograph by Antonio Beato around 1860's. Washington University (Saint Louis, Mo.) Art & Architecture Library.



Figure 75: The dahabeeyah 'Aida' at Elephantine. Unknown photographer 1876. Griffith Institute Archive.



Figure 76: General view of Luxor with a Canja moored on the Westbank. Photograph by Maison Bonflis 1876-1899. Library of Congress Prints and Photographs Division.

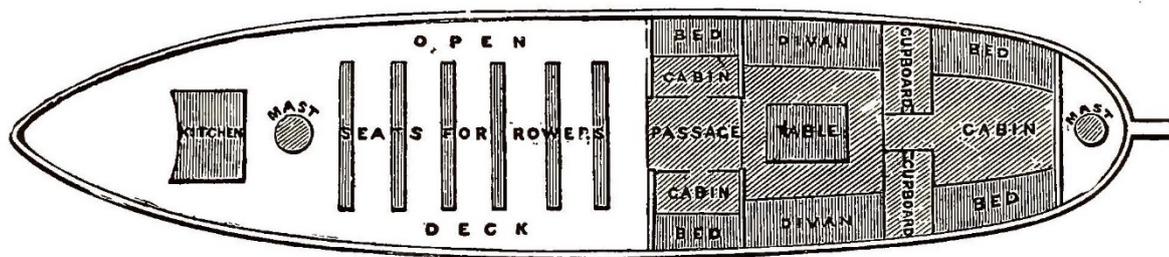


Figure 77: Drawing of a plan of Manning's Dahabeah (1875: 67).



Figure 78: View of Nile boats, including a Dahabeah on the right, and the Canja on the left along with other cargo boats. Photograph by Antonio Beato around 1860's. Washington University (Saint Louis, Mo.) Art & Architecture Library.



Figure 79: View of Nile boats in Aswan, Dahabeah is anchored in the middle of the photograph, while a Canja is anchored on the left and right. Photograph by Antonio Beato around 1860's. Washington University (Saint Louis, Mo.) Art & Architecture Library.

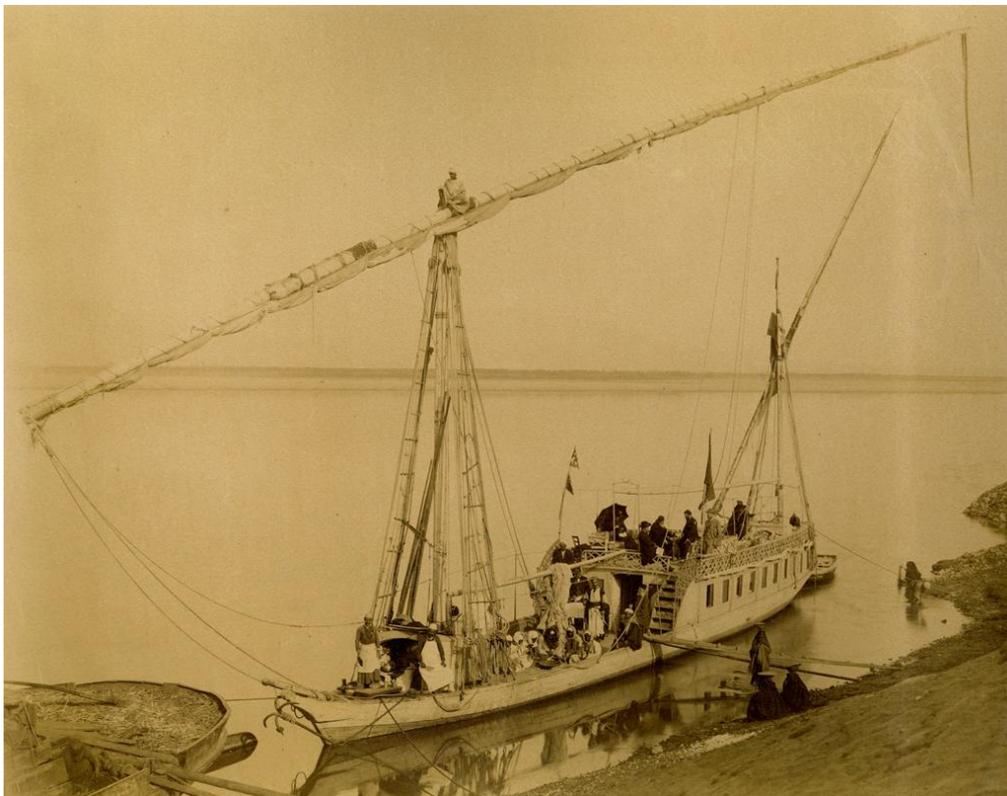


Figure 80: A dahabeah anchored on the Nile. Photograph by Antonio Beato around 1860's. Washington University (Saint Louis, Mo.) Art & Architecture Library.



Figure 81: Cairo, Dahabeah or Nile boat. Unknown photographer 1860 - 1890. Library of Congress.

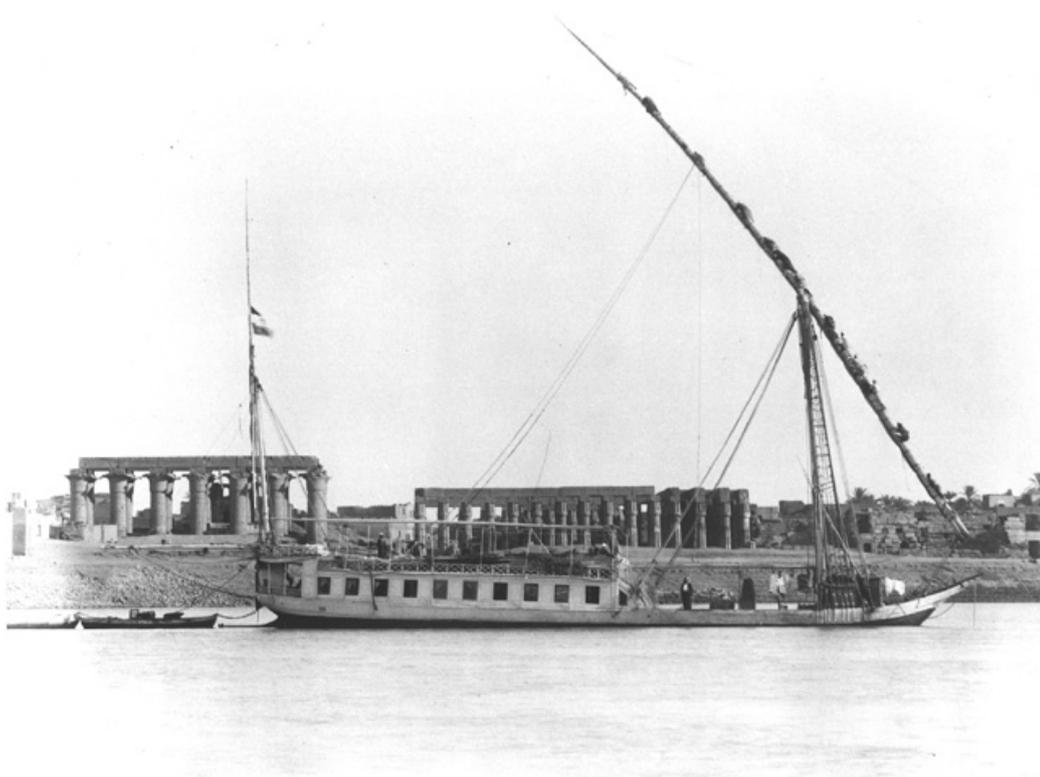


Figure 82: A Dahabeah with the temple of Luxor in the background. Unknown Photographer 1890. Griffith Institute Archive.

Chapter 6 The introduction of the Clyde boats 1860 – 1900

6.1 Introduction

In previous chapters, the researcher has outlined the scene in Egypt, detailing historical and geographical backgrounds alongside the various types of boats and ships that were used in and around the Nile. However, Egypt during the late Ottoman period was not isolated; it served as the Gate of the East. As mentioned in chapter 4, England's control of the Indian Ocean and its relationship with its colonies in that region were directly threatened by the French occupation of Egypt under Napoleon in the final years of the 18th century. This led to the intervention of the British navy and the Battle of the Nile in Abu Qir Bay, 20 km east of Alexandria, ultimately positioning Egypt at the forefront of British interests in the East.

When Mohamed Ali Pasha rose to power in Egypt, he envisioned an independent, self-sustaining Egypt as a significant power in the East. He regarded the industrial revolution in the West as a model to emulate, aspiring to acquire this knowledge for the benefit of both himself and his country. Therefore, the study of changes in Egyptian internal affairs is closely linked to the global context. This chapter will explore the emergence of imported metal-hull boats and their integration into the Nile environment, investigating when, how, and why they appeared, as well as their short-term and long-term effects on local Egyptian boats.

To better understand what happened to the Nile boats, we need to refer back to the past two chapters and attempt to connect them. This involves reflecting on the historical and geographical context, as well as the contributions of shipwright advancements to the Nile boats. We aim to comprehend what truly occurred to cause the alteration of a thousand years of traditions in less than a century. To achieve this, it is necessary to revisit and discuss the shipbuilding technologies and the introduction of steam engines to ships during the 19th century. The theory guiding this chapter is that the emergence of Clyde-built steel boats on the Nile impacted how local boatbuilders viewed their designs. The propulsion techniques did not influence the Nile sail boats until the 20th century, coinciding with the state-sponsored overhaul of the Nile transportation system under Gamal Abdel Nasser, which will be explored further in Chapter 8. However, a change in rigging design was observed during the latter half of the 19th century, which became predominant on the Nile throughout the 20th century; this aspect will also be discussed in the chapter 8.

Chapter 6

This chapter includes all the information about the early use of metal-hulled ships and boats in Egypt. The origins could trace back to the time of Mohamed Ali, when the Pasha decided to revive trade in Egypt and focused on establishing a naval fleet. Egyptian naval power during the 18th century was dominated by its subjection to the Sublime Porte in Istanbul. At that time, Egypt lacked autonomy. It was not until the Pasha seized control of the country in 1805 that he embarked on his grand project to rebuild the glorious city of Alexandria as the capital of a future and independent Egyptian Kingdom.

Alexandria, once the splendid city and pinnacle of the Hellenistic world, had fallen into disrepair during the medieval period, losing its status as the main port city of the country to rivals like Rosetta and Damietta at the mouth of the Nile, through which all trade into and out of Egypt was channelled. However, the grand merchant ships of the Mediterranean could not navigate the river's mouth, necessitating the development of a transitional system. It remains unclear when this system was first created, but all historical sources describe the process of transit through the mouth of the Nile River Rosetta.

Merchant ships were to anchor offshore on the vast sandbar ridge near the coast of Rosetta, while smaller Nile boats with shallow drafts would emerge from the mouth of the Rosetta branch and navigate the open waters of the Mediterranean Sea to collect cargo from the anchored ships. Mikhail (2011, pp. 150-169) describes this process in his book, where he recounts various historians and literary sources regarding the procedure. Cooper (2012) also includes accounts of this scene. The lighters of the Nile, or what were known as the Jerme boats, were the type of Nile boats used for this task. The Jermes or Djermes were employed to transport cargo from trans-Mediterranean ships anchored at the entrance of the Rosetta branch “boghaz” into the city of Rosetta itself. Cooper (2012, p. 59) argues that during medieval times, despite its significant disadvantage, Alexandria remained the best port in Northern Egypt. This allowed ships with larger drafts to anchor in its ports, although it faced one drawback: the temporality of the freshwater canal connecting Alexandria with the Nile. Thus, when Muḥammad ‘Alī decided to establish his new capital, he chose Alexandria over Rosetta or Damietta, both of which were already established ports cities.

Another change was introduced during the reign of Khedive Ismail with the establishment of the Khedivial Mail steamers. This opportunity was later seized by Thomas Cook and Son. As mentioned in Chapter 4, the emergence of Clyde steel on the Nile stemmed from the expansion of Thomas Cook’s touring venture in Egypt after his successful tours in partnership with the Khedivial Mail steamers, establishing himself as the first tour organiser on the Nile. The ambitious John Mason Cook built upon his father's legacy, establishing the largest tour operator company in

Egypt. After acquiring a piece of land in Bulaq, he introduced his local boatbuilders and engineers to modern boat designs.

During the golden days of Thomas Cook and Son Co (TC&S), the majority of Nile tour boats became increasingly European, not only in taste but also in construction materials and commodities. This reflected in the periodic decline of wooden dahabeahs under the TC&S flag, as more tourists gravitated towards the roomier and cleaner metal dahabiyah. During this time, we could utilise photographic resources to trace some changes in local boats. The small Feluccas that once took tourists on brief excursions along the Nile began changing in shape, benefiting from European influences rigging.

6.2 Appearance of Metal Hull on the Nile

To better understand the changes that occurred in Nile boats, one should take a step back and consider the overall global trends, particularly in the Mediterranean. Wooden shipbuilding remains a vital industry in many Mediterranean regions, and the 19th century was no exception. However, this century witnessed significant technological advancements following the Industrial Revolution. Delis (2012, p. 349) argues that wood remained the predominant material for shipbuilding on seagoing vessels until the 19th century. Steam engines were modified for industrial use by Boulton and Watt in 1776, but did not find their way into maritime activities until the early 19th century, when the first commercial paddle steamship services began in North America between 1807 and 1811. Sidewheel or paddle steamships soon lost their advantages with the introduction of propellers in 1845-46 in France and England.

The potential for additional business fuelled engineers' appreciation that the design and performance of the steamboat could be improved. The rapid adoption of the steamboat ensured that an expanding market was more than just a prospect; it became a reality. A surge of operators entered the steam navigation business as the vast market for passenger traffic and scheduled services quickly became apparent. Steamboat proprietors were eager to have larger, more reliable, faster, and above all, more cost-efficient vessels. Early steamboats had high fuel consumption, representing both direct and indirect costs, as potential cargo space was sacrificed for bunkers (Armstrong and Williams, 2011, p. 16).

The Peninsular and Oriental Steam Navigation Company (P&O), founded in 1840, oversaw mail delivery across the Mediterranean and the Indian Ocean. The Great Liverpool and the Oriental were the primary mail delivery ships between Southampton and Alexandria. With a consumption of 900 tons of coal, these steamships managed to complete their itinerary in 15 days, compared

to the 6-7 weeks it would take a sailing vessel. Both steamships featured amenities to accommodate travellers heading east, eager to explore the Orient. In the 1840s, the service departed from Southampton to Alexandria on the 3rd of every month, and on the 25th to Constantinople via Gibraltar, Malta, Athens, Syros, and Izmir. By the 1860s, traffic had doubled, and it increased even further by the 1880s (Servantie, 2014, pp. 504–514).

In 1887, the introduction of the triple expansion steam engine, renowned for its low coal consumption and reliability compared to earlier steam engines, marked the beginning of the decline of sailing ships. Alongside this decline, various associated jobs and traditions began to vanish or transform to accommodate the new technology, as will be discussed in the following pages regarding the reformation of the Egyptian navy by Mohamed Ali.

Technological advancements changed the way people, cargo, and information traverse the Mediterranean. This progress fostered positive relations between Western Europe and the Eastern Mediterranean and North Africa, resulting in increased speed and volume in the transport of passengers, goods, and news. In a little over a century, the rapidly advancing steam technology revolutionised shipbuilding traditions worldwide, ultimately paving the way for stronger building materials.

6.2.1 Mohamed Ali's venture to expand his fleet.

Controlling the internal waters of Egypt was his foremost priority. In 1807, his Nile flotilla comprised six gunboats and approximately 800 Nile boats (Houghton, 2019, p. 165). The first instance of Mohamed Ali Pasha commencing the construction of an arsenal in Egypt occurred during 1809-1810, in preparation for his son's campaign against the Wahhabis in the Red Sea, as part of his agreement with the Sublime Porte. The Pasha ordered the construction of 15 to 18 ships, each weighing between 100 and 150 tons, at Bulaq, where wood was sourced by his army from across Egypt, including buckthorn and mulberry trees. Mohamed Ali then instructed that the freshly cut planks and ship components be transported overland to Suez, where four large ships with two square sails, known as "ebriq", were built. An additional eleven ships of the "skoun" type were constructed (Syrhnc, 1896, p. 226; Houghton, 2019, p. 166). Simultaneously, the Pasha commissioned his first frigate, named Africa, to be built in Alexandria in 1810. It was subsequently dispatched to London for copper sheathing and fitting out. The Pasha attempted to procure new ships from Britain but was met with refusal. Consequently, he sought alternatives to secure his naval power.

As mentioned in chapter 4, Mohamed Ali remained the Viceroy/Pasha of Egypt under the jurisdiction of the Sublime Porte in Istanbul until he received the ferman of 1841, which assigned

Egypt under the rule of Mohamed Ali's family. During the 19th century, Egypt was involved in all the Ottoman conflicts across the Mediterranean and beyond. It was not until after the naval battle of Navarino in 1827, which pitted the Ottoman Navy against the Allied Navy, consisting of British, French, and Russian squadrons, and following the loss of all the Egyptian battleships, that Mohamed Ali decided to reorganise his navy once more. According to Houghton (2019, p. 169): *“Muḥammad Ali was then left with only two frigates (a third was expected shortly from France), five corvettes, six brigs and four schooners. In the Red Sea were a corvette and two schooners”*.

This time around, the Pasha focused more on Egyptian affairs than on the Ottoman Empire. He directed his public works towards expanding both Egyptian maritime and riverine vessels. The Pasha continued his grand plan and vision for Alexandria to become the great city of Egypt by first expanding its ports—both the Eastern and the Western—while maintaining the connection with the Nile, as will be discussed next section.

Mohamed Ali's expansion and deepening of the Alexandria's Western Harbour was finished by 1831, and started again another venture to rebuild his navy, however, this time, he decided to obtain the knowledge of shipbuilding by hiring a French engineer from Toulon Dockyard. Louis-Charles Lefébure de Cerisy⁴, who was the chief naval engineer building the Pasha's latest Frigates (*Murshid al-Jihad* and *Al-Buhayra*) in Marseille during 1826-27, was employed by Mohamed Ali to oversee the reform of his new Egyptian navy, with the help of a local Egyptian Naval engineer, Haj Omar. As Mohamed Ali was impressed by how the French navy was structured, after hearing reports of the war in Greece by his son and head of army, Ibrāhīm Pasha, upon his return from Navarino. Mohamed Ali resorted to local skilled work hands over the more costly European shipyards in France, Italy, and the UK. Marsot (1990, pp. 65-66) discuss the immediate effect of the post-Napoleonic era in Egypt. The Pasha acquired the technical training of French military and civilian experts who were in search of a new livelihood and put their expertise into good use. Reforms in agriculture, industries, army/navy training and extensive public work and irrigation

⁴ “Méhémet Ali , Viceroy of Egypt , asks the French government for an engineer destined to create a powerful squadron in its states : Cerisy is chosen by the Minister of the Navy , his relative , M. de Clermont-Tonnerre . In 1828 , he signed an engagement contract with the Viceroy of Egypt , Méhémet-Ali for an annual amount of 19000 Francs , seven times that of his French rank .Everything is paid to him in addition , accommodation , food and clothing and 4000 francs of travel expenses .In fact, these amounts are revised upwards during his stay .He is the craftsman of the arsenal of Alexandria and builder of the Egyptian fleet with Antoine Barthélemy Clot , promoter of modern medicine in Egypt ...At the Alexandria shipyard he directed , for each vessel launched , he was rewarded with a diamond snuffbox , his wife received a cashmere shawl , gifts he estimated at 15000 or 18000 Francs .Cerisy is given the rank of Brigadier General in 1833 and the title of Bey . Then with the rank of admiral , he received new diamond decorations . He returned to France in 1835” – extraction from https://threedecks.org/index.php?display_type=show_crewman&id=40236

projects were all the Pasha's plan to enlarge and sustain his empire in the Eastern Mediterranean. De Cerisy planned 5/7⁵ building slips for ships, frigates, and smaller vessels, along with workshops, storage sheds, ropewalk, administrative offices, and accommodation.

6.2.2 The emergence of Nile steamers during late Mohamed Ali period

The researcher agrees with what Marsot (1979, p. 61) analysis of the Pasha's ambition *"Muhammad Ali sought to parallel in Egypt the lines of development of British industry-whether consciously or unconsciously. In order to capture a share of the world markets he planned to spread his hegemony over potential markets and utilize their raw materials at one and the same time."* This development of type of British industry, was advert in both the industrial reforms and public works in Egypt.

As discussed in the previous section, the newly developed arsenal at Alexandria was busy building and assembling steamships and boats to serve the Viceroy of Egypt. The first Iron Steamers to be acquired by the Pasha, to serve on the Nile, were imported from Britain in 1837 and 1839. The one constructed by Laird of Birkenhead of Liverpool and fitted with a steam engine by Napier of Glasgow⁶ was used by the Pasha himself as a personal yacht (Clot-Bey, 1840, pp. 418-419; Houghton, 2019, p. 176). The second, smaller steel steamboat was assembled at the new arsenal at Alexandria in 1839, from parts that were prefabricated in Britain.

Furthermore, the Pasha ordered the build of 3 more iron steamers for Nile service between 1839 and 1844 (Houghton, 2019, p. 176). Back then, in 1840's, the Pasha's chief doctor, Antoine Barthemely Clot, also known as Clot-Bey, wrote about the early introduction of steamboats on the Nile. He discussed how Egyptians were astonished to see such a machine on the waters of the Nile. However, he thought that at this early age, and the scarcity of fuel in Egypt (coal) would hinder the development and spread of steamboats in the country (Clot-Bey, 1840, p. 419). And he could not be more wrong, as in just few years, Mohamed Ali ordered passengers and cargo to be transported with the aid of steamboats between Alexandria and Cairo, via the Mahmudiyah canal.

⁵ Discrepancies in numbers between two of the main resources used in this section, the first is by Admiral Sirhank, the head of Egyptian School of War 1896, published his study of the Egyptian Navy, and a research paper by Houghton, 2019, The Egyptian Navy of Muhammad Ali Pasha, *Mariners Mirror* 105(2), 162-182.

⁶ In depth study of the early steamboats in Britain can be found in: Armstrong and Williams, 2011, The beginnings of New Technology: The constructors of Early Steamboats 1812-22, *int. j. for the history of eng. & tech.*, Vol. 81 No. 1, January 2011, 1-21.

In 1835, and after the work ordered by Mohamed Ali in Suez, The East India Company took advantage of the new facilities and started delivering mail and cargo through Egypt. Later, the Pasha ordered the renovation and expansion of the Cairo – Suez land road. Coupled with the newly modified Cairo-Alexandria River route, Egypt became the focal point of cargo, mail and tourists between the West and the East⁷. The first test run on what is known as the over-land route to India was made possible by the new steamer *Sir Hugh Lindsay* in 1830, built in Calcutta, this 411 ton-capacity paddle-steamer with two 80 HP steam engines, sailed from Bombay to Suez in just 33 days, arriving on the 22nd of April of 1830. This route, however, did not witness regular trips until later in 1835, when Coal depots were established at Aden, Jeddah, Quseir and Suez ((Anderson, 2012).

6.2.3 Maḥmūdīyah Canal barges

Since the establishment of Alexandria by Alexander the Great in 332 BC, the city has faced the same predicament regarding its fresh water supply. Schedia, Nasiriyah, Ashrafiyah, and the Alexandria Canal are all names of the narrow strip of fresh water that stems from the westernmost branch of the Nile, carrying not only its waters but also products and people into Alexandria (Figures 82, 83). By the 18th century, the Ashrafiyah canal was the sole source of fresh water for the city. With over 210 underground cisterns, the canal filled these vast reservoirs, providing access to fresh water for the city's inhabitants.

However, the Ashrafiyah canal did not fulfil its intended purpose regarding navigation. Mikhail (2011, pp. 242-290) describes the hardships faced by the residents of the region surrounding the canal in relation to public works. Most peasants were required to work under Ottoman rule on the embankment and cleaning of the canal, ensuring its capacity to withstand the annual inundation, primarily to deliver fresh water to Alexandria. Mikhail's extensive study of Ottoman court records in Egypt has made him a key resource on the subject. In his chapter discussing what he terms 'Another Nile,' Mikhail recounts the various challenges endured by both the government and the local populace throughout the 18th and 19th centuries to keep this vital artery of life flowing into the Second City Egypt.

The vision of the Pasha was to remodify the already existing Ashrafiyah canal. He ordered its mouth and end to be modified. He ordered it to be 30 m wide, 3.65 m deep and 80,000 m long.

⁷ Early development of this route was proposed by James Henry Johnston in 1822. However, due to the lack of interest, and concerns about the costs and efficiency of steamboats by that time rendered this route unfavourable. More detailed account can be found in Halford, 1926, the first steam voyage to India.

The new mouth at al-Atf was to be 6.8m wide, and both the mouth and the canal itself were to be made wide and deep enough to allow ships to sail on them during the time of the flood. A quay and collection basin were built on its end in Alexandria (Figure 85), making room for boats to dock and for cargo to be trans-shipped through the city of Alexandria (Mikhail 2011: 225-287). Thus, between 1817 and 1820, Mohamed Ali ordered the digging of the reincarnation of Ashrafiyah canal, which he named Al-Maḥmūdīyah after the sitting Ottoman Sultan at the time. Under the direct supervision of the French architect Pascal Coste, almost 400,000 workers were brought from different villages across the delta region to work on this massive venture. This project is considered the first grand public work project in the modern history of Egypt (‘ilm al-Dīn, 1989, pp. 14–16)⁸.

The Overland Route was becoming increasingly attainable. Lieutenant Thomas Waghorn was the one who made it all possible. For years, he had been in contact with authorities in both India and England to advance the idea of the Overland Route through Egypt. Finally, in 1831, he secured a concession from Mohamed Ali Pasha to operate the Overland portion of the route. This concession included a combined Nile and land route from Alexandria to Suez via Cairo. The first portion of the route is divided into two segments; the first runs between Alexandria and al-Atf via the Al-Maḥmūdīyah canal, followed by steamboats to Bulaq. In Bulaq, the cargo is then transferred into carriages all the way to Suez.

The Al-Maḥmūdīyah canal boats were facing problems sailing the canal, thus the crew used to track the boats for the majority of the length of the canal (Figure 86). On later stages, the Pasha tried to expedite the moving of cargo, thus a number of horses were employed to tow the barges from the banks of the canal between Alexandria and the barrage at the entrance of the canal at al-Atf. Then, passengers, mail and cargo are transported over to a steamer standby on the Rosetta branch, continuing its trip to Cairo. Mohamed Ali then introduced steamboats into the canal, to tow the sailboats and (Figure 87). Under Waghorn’s operations, the Peninsular and Oriental Company won the Suez – Bombay concession for delivering mail, and in 1840 also got permission from the Pasha to operate two steamships on the Nile, as well as a number of steamboats and tugs to expedite the movement of tourist and cargo in the Al-Maḥmūdīyah Canal⁹. Furthermore, In 1842, the barrages at both ends of the canal were demolished. A water lock (Figures 87 and 88) and a series of pumps were installed, facilitating easier navigation for boats along the entire

⁸ Prince Omar Toussoun (1942) translated his writings about the Nile River and published a full account of the Maḥmūdīyah canal since it was conceived by the Pasha until his days.

⁹ Arther Anderson, the head of P&O Co signed a contract with the Pasha to operate steam tugs and steamboats on the Canal and the Nile.

length of the canal from the western harbour in Alexandria to the Rosetta branch in al-Atf. This reduced the land portion of the overland route to just three days, enabling the entire journey from Southampton to Calcutta to be completed in less than 40 days, compared to four months via the Cape of Good hope.

Mohamed Ali, working on building his independent Kingdom, feared the ever-growing interference of Western powers in Egypt, thus he decided to buy the concessions back from Waghorn, P&O, and Hill & Co¹⁰ in 1844, and he established a governmental department overseeing the transportation of mail and passengers through the Egyptian lands (Richardson, 1822, pp. 3–31; al-Ḥittah, 1967, pp. 215–217; ‘ilm al-Dīn, 1989, pp. 14–16).

6.2.4 Steam on the Nile:

It is now crucial to monitor the establishment of a new department in Egypt, responsible for managing mail, passengers, and cargo throughout the country via steamboat. As previously mentioned, the origins of this governmental department trace back to Mohamed Ali in 1844/1845. By 1830, both a maritime route and a land route had been established from London to India through Egypt, prompting Egyptian leader Mohamed Ali to found the Egyptian *Maṣlaḥat al-murūr* (department of transportation) in 1845 (Yehia 2020: 42). This department of transportation held a monopoly over the entire transportation system in Egypt, including Nile transport, which encompassed all steamboats, steamships, tugs, and passengers sailboats.

When Saeed Pasha was appointed Viceroy of Egypt in 1854, he established a separate department dedicated solely to the Nile transportation system, known as *Maṣlaḥat al’njrāryh*. The new Pasha acquired several sailboats and steamers, assigning ex-navy officers to the department to oversee the transportation of mail, cargo, and tourists throughout the country. He also employed 115,000 workers to dredge and clean the Al-Maḥmūdīyah canal, and a series of water pumps were installed at the entrance of the canal in al-Atf to enhance the water velocity in the canal.

During the same year, the Pasha established an Egyptian semi-governmental company called “The Egyptian company for Steam navigation” or *al-Sharikah al-Miṣrīyah lil-milāḥah al-Bukhārīyah*, with a concession of 15 years to organise all Nile shipping using steamships. The reason was the difference in time between traditional sailboats speed versus steamboats in covering the distance between Alexandria and Cairo. Sailboats would take 15 days, while steamboats would only need 36 hours to cover the same distance. The sole purpose of the company was to transport all local

¹⁰ Hill and Co operated the steamer Jack O’lantern between Atf and Cairo, and also operated several steamboats on the Al-Maḥmūdīyah in competition with P&O.

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products and international imports through the Nile, as well as tugging of governmental and private boats on the Nile and the Canal (Figure 90).

During the reign of Ismail, and despite the effect that the railways imposed on transportation in the country, it did not totally affect the number of Nile boats during 1860s and 1870s. By 1872, total number of Nile boats, both steamboats and sailboats, was 9,563 sailboat, and 53 steamships. While 30 years earlier, under Mohamed Ali, there were 3,200 sailboats navigating the Nile and its canals. Ismā'īl established another company called al-'Azīziyah, in order to oversee the Egyptian maritime trade. Then in 1864, the Al'njrāryhwas annexed to this company, and finally it was transferred to the Department of War in 1870.

In 1871, the Al'njrāryhwas once more annexed to the newly established Khedivial Postal Steamboats. By 1873, the total number of sandals and steamboats in the company was 60. During that period, Thomas Cook and Sons Co had two concessions from the Egyptian government: the first was to sell food and beverage across all steamboats owned by Al'njrāryh, and the second was to transport tourists on the Nile. Thus, during the tourism season in Egypt every December, Al'njrāryh modifies their steamboats, and fresh paint is given to it, and better equipped for hosting Cook's tourists. Furthermore, the schedules and docking stations of the steamboats were modified to suite the touristic schedule that Cook have arranged to his tourists. Between 1875 and 1879, postal steamboats were delivering mail beyond Assyout, to Aswa, and then to Sudan twice per week. During 1884/1885, Thomas Cook used these steamboats to transport the Gordon Relief Expedition to Sudan.

Then the government decided to close Al'njrāryh, and sold its boats, some of them were acquired by Thomas Cook Co. and it only kept few boats. During the reign of 'Abbās Helmy II in 1892, Only 5 Nile Steamboats were remaining under the Khedivial boats, which are *Feid Rabany, Feid Thafir, Fayrouz, Zeinet El Bahrein, Hehiyah*.

During the reign of King Fouad, in 1925, he established Masr for Transportation and Navigation Company, with the porous of conducting all maritime and land transportation, including Nile transportation. It included a number of steamboats and 12 sail boats, and two storages in Alexandria and Bulaq. It also included 8 diesel engine boats and two tourist steamships.

6.3 Adaptation of Nile Boats to suit the European Taste

As discussed previously in this chapter, significant modifications were made to the navigation of the Nile in Egypt. Aside from the public works projects mentioned in Chapter 4, another modification was the establishment of steamboats as the primary and most reliable means of navigating the waters of the Nile. Steamboats transported mail, cargo, military forces, and tourists throughout Egypt. This section is devoted to exploring the changes introduced by Thomas Cook and Sons Co. to the general approach and experience of travel and exploration in Egypt. Previously, the research included brief segments on the beginnings of Cook's activities in Egypt, and in the following pages, we will delve deeper into the resources needed to understand the changes introduced to Nile boats Nile.

6.3.1 Thomas Cook's touring venture In Egypt

Although Thomas Cook was not the first to organise a railway excursion, the Grand Tour, or even Nile tours, he was the first to utilise this concept to create a social phenomenon, which enabled him and, subsequently, his son to become the most dominant figures in the travel industry worldwide during the second half of the 19th century. As Hazbun (2006, p. 9) rightly stated "*Much of his initial success followed from his ability to draw upon an existing social organization, his temperance society, as a ready client base.*"

As mentioned previously in chapter 4, Thomas Cook began expanding the firm's operations to Egypt in 1869 when he conducted a tourist party to Egypt and Palestine, and another trip that included witnessing the opening of the Suez Canal. He first did a scouting journey by himself during Autumn of 1868, exploring the Eastern Mediterranean, including, Turkey, Syria, Palestine, and Egypt. During the 19th century, and after the publication of the Description of Egypt during the first quarter of the century, Egypt draws much of tourists and travellers' attention (Hazbun, 2016, p. 125).

During the Winter season of 1869, Thomas Cook conducted and personally led a tour of 32 travellers up the Nile, where in Cairo he managed to negotiate the rental of two of the Khedivial Mail Steamers from Al Aziziyah company to transport Cook's tourists up and Nile, with regular stops for sightseeing along the way. The two steamers, *Benha* and *Beniswaif*, had 16 tourists each, including Thomas Cook, and started their trip from Cairo (Humphreys, 2015, pp. 7–25; Fares Yehia, 2020, pp. 41–43).

At the same time, there was another group of English tourists sailing down the Nile. However, this was a VIP group under the personal auspice of Khedive Ismail. The group was Albert, then-Prince

of Wales (and future King Edward VII) and his wife. They came to the country ahead of the inauguration of the Suez Canal. After a brief stay in Cairo, the Prince and Princess of Wales sailed up the Nile for a six-week trip on a flotilla of the finest Khedival Dahabiyahs and steamboats (Yehia 2020: 43). The fleet consisted of 5 steamers, a steamer tug, and a Dahabiyah called *Alexandra* which was used as the Royal sleeping quarters (Humphreys, 2015, pp. 18-19).

Cook received an invitation to attend the inauguration from his close friend Ferdinand de Lesseps. Six months after finishing his tour of Egypt and the Holy Land, Thomas Cook advertised another tour to Egypt, this time featuring a programme to follow the “Event of the Century,” the opening of the Suez Canal in November 1869. Cook and his small group of tourists boarded the *America* at the harbour of Trieste, sailing to Port Said, the newly built city at the Mediterranean entrance to the Canal. However, he did not plan for an excursion up the Nile this time. (Figure 91).

August Mariette, the French Egyptologist who became the foremost archaeologist in the country, was appointed the head of the antiquities department by Khedive Ismā‘īl himself. He was responsible for creating a new itinerary of visits for the Khedive’s close friends to sail up the Nile and explore the country. A month before the inauguration, approximately 200 distinguished Khedivial guests arrived in Cairo for the beginning of their pre-inauguration tour of the country. Ismail Pasha accompanied the Empress Eugenie, the guest of honour at the inauguration, on a visit to the pyramids. Mariette devised an itinerary for 29 days, which included 5 days in Cairo and a 24-day cruise along the Nile¹¹.

Thus far, all work in Egypt had been carried out by Thomas Cook. However, the year 1869 marked the final Nile tour by Thomas. His son and partner, John Mason Cook, took over the family business in order to explore its expansion and the potential for generating more income from the touring company. In 1870, John not only organised a Nile tour for 44 tourists aboard the Khedive’s largest steamer, the *Beherah*, but also secured a 10-year contract for the operation of the Nile steamer service. In 1871, John became an equal partner in the family business, and from then on, the company was known as Thomas Cook & Son (TC&S). In 1872, the Khedive authorised TC&S to open their first office within Cairo’s Shepherd Hotel. During the same year, the Khedive permitted John Mason Cook to extend his lease, hiring four steamers for the Winter season of 1872/73. Three years later, impressed by the success of Cook’s business, he extended the firm’s

¹¹ Mariette compiled and published a guidebook for the 200 distinguished guests, including full itinerary, and information about all the sites that will be visited during the trip. The book is available online on the Bibliothèque nationale de France online library Gallica: <https://gallica.bnf.fr/ark:/12148/bpt6k62084951.texteImage>

Nile passenger service concession beyond the First and Second Cataracts and into Sudan; later, Thomas Cook & Son became the official Khedivial Mail transportation service on the Nile.

The monopoly of Nile tourism was not yet established; thus, in 1880, Cook signed a renewal of his concession contract with the newly appointed Khedive Tawfik. This agreement entailed complete control of eight Khedivial steamers, in addition to the express mail steamers operating between Asyut and Aswan. John Mason modified the Khedivial steamers to suit his first-class passengers. The largest steamboat in the Khedivial flotilla was stripped down to its hull and redesigned to be the biggest passenger steamboat on the Nile. The Masr steamship was revamped to accommodate sixty passengers in single and double cabins and was launched in February 1881.

Furthermore, Cook's influence over Nile transportation led him to establish his own landing places and ultimately to purchase a hotel in 1877, along with stakes in both the Winter Palace and the Cataract Hotel at Aswan. The absolute control of Nile transportation lay with Thomas Cook & Son.

6.3.2 John Mason Cook, Agent of the Empire

During the glorious days of Thomas Cook & Son in Egypt, the British Empire began to view Egypt as the most significant gateway to the East. As mentioned in Chapter 4, the first individual to attempt to persuade the British government of this was the English consul, Baldwin, nearly a century ago. However, by 1875, the British government acquired 44% of shares in the Suez Canal Company. The following year, the British government purchased the railways and the port of Alexandria through its agents in 1876. Finally, in 1879, Britain and the other great powers of the 19th century succeeded in the deposition of Khedive Ismail by the Ottoman Empire Sultan.

Until 1881, TC&S could still claim to be engaged in the business of peace, serving both Egyptian and British governments equally. It was not until July 1882, that they were no longer on neutral. Cook became an ardent supporter of British colonisation; following the British envision of Egypt in 1882, after the bombardment of Alexandria between 11th and 13th of July 1882. Cook's ships helped transport the British military and suppress the Urabi revolution. Transported the wounded from the battlefield to hospitals, even assigning one of the Nile boats on the Sweet-Water Canal (Ismailiah Canal) at Tell al-Kebir to serve as a hotel for battlefield tourists. He even arranged a cruise for General Sir Grant Wolseley, the British army commander who landed in Egypt. Daily Telegraph once styled him the "unofficial consul" of Great Britain.

Cook's reputation as a master of imperial logistics was further enhanced when London again turned to John Mason Cook to organize a relief expedition to rescue General Charles Gordon from Khartoum. Cook was the one who conveyed Gordon all the way to Khartoum to suppress the

Mahdi's revolt in Sudan. During 1884, Cook was ordered to hold all passenger steamers activities and reserve his entire fleet for the British army. Over the course of two months starting in September, Cook organised the movement of 18,000 troops, including 7,000 Egyptian soldiers, along with 40,000 tons of supplies, 40,000 tons of coal, and approximately 800 whaleboats from Tyneside to Egypt, utilising 28 of the largest steamships. Troops and supplies were transported to Asyut via railways, and the journey down the Nile required 27 steamers and 650 sailing boats to ferry the troops and their provisions. In total, the entire operation necessitated 5,000 local labourers.

Despite the failure of the mission itself, the logistics of mobilising the troops represented a massive undertaking. It is believed that the Gordon Relief Expedition was the only occasion on which the British Army has gone to war using private transport. Furthermore, the main beneficiary of this failure was John Mason Cook. His steamboats were heavily damaged during the journey, prompting him for the first time to custom-build his own luxurious Nile steamers. With the substantial sums of money he obtained from the British government, along with returns on his investments in three Tyne colliers, which provided the coal needed for the expedition, Cook capitalised on his contract to increase his earnings (Hunter, 2004, p. 40; Fares Yehia, 2020, pp. 51–52).

6.3.3 Thomas Cook importing Clydeside steel hulls

The next thing Cook did was order several steamers to be built to his specifications. In 1886, he purchased a plot of land on the Nile in Bulaq from the Egyptian government. Another plot of land was leased to the company to serve as a landing site for the steamers. John then turned his attention to his homeland for supplying his new fleet of steamboats (Figure 91).

As mentioned earlier, the commercial use of steam power for water transport preceded its significant use on land by some fifteen years (Armstrong and Williams, 2005, pp. 61–65). Furthermore, the first commercial steamboat service began in 1812 when the Comet started carrying passengers down the Clyde to Helensborough. Even though the Clyde was not a major centre of shipbuilding in Britain, it is considered the birthplace of riverine navigation and excursions. Consequently, the number of steamboats produced at Clydeside factories was substantial. Steamboats soon began engaging in various forms of estuarial and short coastal activity work.

Cook commissioned the construction of his first two steamers at Fairfield Govan in Glasgow, on the Clyde River. The design of these boats was inspired by American steamers, featuring side paddlewheels. The entire vessel was constructed from steel and measured 30.48m by 6.069m,

making them the largest Nile boats to date, with a draft of just 2.1m, allowing for easy navigation of the Nile.

A notable aspect of this operation was that the boats were shipped in sections from the Clyde to the Nile. They arrived in crates at the port of Alexandria, then were loaded onto a train to Cairo, where John's engineers and workers assembled the vessels at the company's newly established docking facility in Bulaq. The first two steamers were named Tewfik and Prince 'Abbās to honour the current Khedive of Egypt and his son (Figure 92). Khedive Tawfik was quite eager to see the latest technologies in steamboats and shipbuilding, so each time Cook launched a steamboat, he had to pass by the Pasha's palace to demonstrate the newly launched vessel boat.

John Mason learned of another steamer being constructed for the French government, but it was a surplus and they didn't require it. Therefore, he not only purchased it but also commissioned the same shipyard on the Rhone to build him another steamer that resembled the first two he ordered from the Clyde. The two steamers were subsequently towed to Alexandria and then into the River via the Damietta branch. However, the large steamer, named Ramses, was too big for the navigational water locks at the Cairo Barrage. Consequently, Cook ordered 60 of his engineers and workers to slim down the steamer to ensure it could pass through the Barrage. Finally, it was towed to Cairo, and in just six days, it was repaired and equipped with everything required, being commissioned into service alongside the other Rhone-made steamer, Prince Muḥammad 'Alī, and the two Clyde-built steamers. These four crown jewels of TC&S served as the First-Class tourist steamers on the Nile during the tourist season 1886-87.

To provide a clearer understanding of the scale of Thomas Cook & Son in Egypt, Andrew Humphreys (2015: 95-96) describes the TC&S Bulaq service depot, where dry docks, engineering sheds, and various machine sheds were established. The largest and first venture of the new shipyard was the assembly of yet another Clyde-built steamboat, Ramses the Great, which was also constructed at the Fairfield Works (Figure 93). This vessel was subsequently dismantled and shipped in 3,750 cases to Alexandria. The cases were then transported by train trucks to Cairo, where TC&S engineers and workers immediately began reassembling the boat. They completed the entire reassembly in just 14 days, and by the 15th day, Ramses the Great was in the waters of the Nile. Khedive Tawfik visited the shipyard and admired this new Nile steamer on the final night of assembly, where he observed a demonstration of the ship's searchlight, which enabled the vessel to travel during the night.

Utilising steam power to his advantage was not sufficient for John Mason Cook, despite his total dominance of the Nile travel business in both Egypt and Sudan. He subsequently set his sights on the oldest type of boat that has been transporting travellers along the Nile for centuries: the

dahabiyah. In contrast to the express and affordable travel options that Cook's steamers provided to the British and Western middle class, the dahabiyah business was both expensive and time-consuming. Despite the advancements in steamboats and the reliability of transportation on the Nile during the last two decades of the 19th century, the dahabiyah trade persevered. Therefore, John decided to acquire some of the finest sailboats on the river. He also constructed his first dahabiyah, named Philites, which was a standard wooden-hulled dahabiyah (Figure 94).

After 1888, John Mason ordered the building of more dahabiyahs, making the total number of them to 13 dahabiyahs in just 5 years. By 1893, TC&C launched yet another first-class steamer named Ramses the Third, and the attendance of the launch was 'Abbās Helmy the new Khedive of Egypt. During his speech, John stated that when he made his first trip on the Nile 23 years before, there was only one passenger-carrying steamer and 136 dahabiyah, and now, in 1893, there were 15 steamers all under the TC&S flag and not more than 30 dahabiyahs, which half of them are under his ownership.

Since that time, TC&S started developing a better and more reliable dahabiyahs to give the luxury experience to their clientele (Figure 96). During the researcher's visit to the Thomas Cook Archives in Peterborough, a series of correspondences were between Thomas Cook & Son in Ludgate Circus, and Alley & Maclellan Engineers in Glasgow to plan, fabricate and deliver a steel dahabiyah to the Nile, with the same plan as the last dahabiyah built for the company during the year of 1893 (Figure 98, Figure 97). The dahabiyah is made of steel hull with 90 ft long, 16ft beam and 4 ft deep for the sum of 505 British Pounds. The unknown dahabiyah included 1 double bedroom, which is the main bedroom at the aft of the boat, a big indoor saloon, and two more single rooms at midship, another room dedicated for the dragoman, and the kitchen is towards the bow of the boat. A sundeck or outdoor saloon is accessed by stairs on the fore of the boat. The boat would then be shipped to Egypt, traditionally in sections, then it would be assembled in Bulaq. The drawings and correspondences do not include the mast, sails, and riggings, as all of these, along with the interiors of the boat are sourced locally from Cairo. The TC&S shipyard in Bulaq would have had everything needed to complete this work.

While researching the various dahabiyahs constructed on the Clyde, the findings have yielded several intriguing results. According to the History of Shipbuilding in Scotland website, TC&S contracted Ally & MacLellan shipyard specifically to build the dahabiyahs. In total, six boats were fabricated on the Clyde and subsequently shipped and assembled in Bulaq. The boats were built over two consecutive years, 1889 and 1890; the first three boats measured 108 ft by 17.5 ft, while in the second year, the measurements were 118 ft by 17.5 ft. No further details regarding the ship

plans were provided. However, a list of the boats' names (Horus, Isis, Osiris, Ammon-Ra, Hathor, and Nephthis).

The last Excursion that John Mason Cook was responsible for was the famous tour of the East for German Emperor Kaiser Wilhelm II¹². John personally made travel arrangements of Kaiser in 1898. One of the contemporary commentators that was cited by Humphryes (2015, p. 123) “the too rigid performance of a task that overtaxed his failing power” was the cause of his death in 1899.

6.3.4 The Golden Boats of the Nile

This section includes analysis of what happened to the golden boats of the Nile, also known as Dahabiyah. As previously discussed in chapter 5, the terminology Dahabiyah is thought to be driven from the word Golden in Arabic, Zahab/Thahab, and the pronoun or suffix that is added to the end of the word, so Golden Boat = Dahabiyah. The oldest mention of this type of boats goes back to 13th century. The term was added to a type of a royal barge on the Nile, which was the festival cabin boat of the Sultan of Egypt, and it was called the Haraqah, or the burning. These Haraqas had different colours, one of them was “*harraget al-Soultan al-ouzma al-maaroufa bel-zahabiya*” The grand Sultanate Haraqa known as Dahabiyah. So it could be that the dahabiyah is the biggest and best boat for the Sultan. It was mainly used during the different festivals of the Nile.

As there were not any previous scholarly studies or research that was done to try and understand the change that happened from the early records of this type of boat until today, this section is a trial to understand better the change of style and sailing techniques regarding the use of Dahabiyah during the 19th century. The reason behind the focus on 19th century is again related to the same reasons this thesis was conceived, simply the availability of both written and photographic resources, which would aid the researcher in his hypothesis regarding the change of this type of Nile boats.

From the resources collected during the research project's duration, most of the photographs included in the database were of a type of cabin boat. These cabin boats had two distinctive hulls shapes:

¹² A full account of an in-depth study of all aspects of the Kaiser's journey and its effects on TC&S can be found in Polat, H. A., & Arslan, A. (2019). The rise of popular tourism in the Holy Land: Thomas Cook and John Mason Cook's enterprise skills that shaped the travel industry. *Tourism Management*, 75, 231–244. <https://doi.org/10.1016/j.tourman.2019.05.003>

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- 1- A slim, agile-looking boat, with a small and low cabin on the aft. The Rudder blade was deeper than other Nile boats attached to a transom. The stern had a wing. This boat has its similarity with the Ottoman Imperial Caiques, or what also is known as Canja/Kanga/Qanja. It also has some lines which are similar to the Ghanjah, and have similar name to it, especially the stern. It also resembles the shape of Venetian narrow Galley.
- 2- Starting from the 19th century, a modified cabin boat that was called dahabiyah appeared on the Nile. The dahabiyah was bigger than the Canja, with bigger cabins, and the stern was completely modified. Maybe because the Canja was infamous for capsizing, thus boatbuilders have decided to build a different type of Nile cabin boat.

During the early days of the 19th century, both Dahabiyah and Canja were used year-round. While travellers were on the Nile, the boats conveyed them upstream. During the low season, particularly in summer, the boats operated as cargo vessels. Although there are no available photographs of a cabin boat carrying cargo, several travellers' accounts mention that the boats transported goods. Consequently, when a traveller chose his or her own cabin boat, they had to sink it to eliminate all the vermin that accumulated inside the hull due to the transportation of goods.

This situation shifted again by the time Thomas Cook commenced his touring business in Egypt. As the number of tourists and explorers grew, boats became cleaner and were exclusively used for tourism and exploration trips only.

By the time of John Mason Cook, three further changes were noted: the Canja had almost vanished from both written and photographic records. As a smaller and inferior version of a Dahabiyah, the Canja inevitably fell out of use on the Nile. The second change involved the size of the Dahabiyahs, which could now accommodate between six and ten passengers. The third and most significant change was the introduction of the Clyde-built Dahabiyah. As discussed in the previous section, John Mason Cook preferred steamboats to sailing vessels; however, when he needed to diversify his clientele portfolio, he returned to the more nostalgic dahabiyah, the one Emilia Edwards wrote about. Yet, upon observing the condition of this type of boat on the Nile, he opted to build a better and more spacious alternative version.

Not only did John Mason Cook change the hull material and the sizes of the "Traditional Dahabiyah", but he also introduced steam tugs to service these dahabiyah. Consequently, all the old accounts of being at the mercy of the weather or having the dahabiyah crew track long

distances were completely transformed with the introduction of a tugboat or a tender dedicated to each Dahabiyah.

Remarks and Discussion

In conclusion, a dramatic change influenced the Nile transportation system during the 19th century. As mentioned in Chapter 4, George Baldwin was the first to propose opening the gates to the East through Egypt. The connection between the Mediterranean and the Red Sea had always been envisaged, even before Napoleon's plan for the Suez Canal. However, it was Waghorn who truly recognised this potential. With the assistance of the amphibious family of Albanians, Muḥammad 'Alī and his descendants made tangible what many Europeans had been contemplating and dreaming about. Thus, Egypt became a gateway to the Orient.

The shape of the Orient was always implied by the Viceroy, later Khedive of Egypt, to show the Western superpowers that Egypt is the gateway to the Orient. Muḥammad 'Alī ensured that Western explorers were welcomed across the country, issuing Fermans and special passports not only to the dignitaries of the Western powers but also to travellers, writers, artists, and antiquarians. Following in his footsteps was the first Khedive of Egypt, Ismail Pasha, who not only allowed safe exploration of the country but also wished to modify Egypt to please the Western visitors. In his overambitious venture to build a New Cairo a few years ahead of the inauguration of the Suez Canal, the Pasha had to obtain enormous amounts of credit from Britain to fulfil his dream. He ordered his head of the Antiquities Department, August Mareitte, to design and execute the new Egypt exhibition at the World Fair in Paris. It was during this fair that Thomas Cook gained fame for organising one of the first intercontinental "excursions" to explore the fair, accompanying a number of Englishmen and women. The researcher hypothesises that the success of this visit and Khedive Ismail's vision of a new Egypt were the reasons that pushed Cook towards venturing into Egypt during the spring of 1868..

As a result of his friendship with the visionary Deliseppes, securing him and his fortunate "Excursionists" tickets to the event of the century—the inauguration of the Suez Canal—Cook, despite not being a personal guest of the Khedive and although Mareitte was the agent planning a VIP Nile tour for the Pasha's close friends, managed, two years later, to negotiate his way through the Egyptian government and secure the first contract on board the Khedive's own steamboats 1870.

If it was Thomas Cook who granted the company access to the Nile, it was John Mason Cook, who later became known as "Mr. Cook" in Egypt, that managed to exploit both the Egyptian and British governments to his advantage. Benefiting from one monopoly contract after another from Khedive Ismail, and at the time when the British Empire sought control over Egypt, Thomas Cook & Son served as the Imperial transportation system. During 1881, it was Cook's steamboats that transported General Gordon and his forces to Sudan, catered to the wounded from Tell El Kebir in

1882, and in 1884/1885 transported thousands of Egyptian, English, and Canadian forces up the Nile in a bid to save General Gordon.

The material benefits to Thomas Cook did not manifest until after 1886 when he secured a plot of land from the Egyptian government, which at the time was administered by the British, to establish his boatyard in Bulaq. In the same year, his revenue from the 1885 expedition was invested in purchasing new, custom-made luxury steamboats, constructed on the Clyde with metal hulls, transported to Alexandria in parts, and then assembled in Bulaq under the supervision of John Mason Cook. With a team of local engineers, shipwrights, and workers, Cook successfully managed his own Empire on the Nile during the last quarter of the 19th century.

The Nile, from Cairo all the way to Khartoum, is familiar with Cook Pasha. During a visit by Lord Evelyn Cromer to one of the sheikhs of Upper Egypt's families, the sheikh did not recognise Cromer; however, he stated that everyone in Egypt knows Thomas Cook.

The impact that Cook had on both Nile transportation and tourism is evident. From monopolising the mail services to establishing the country's first dedicated tourist steamboats and modifying the Nile cabin boats, John Mason Cook left his mark on the Nile, one that endured long after his time death.

6.4 Chapter Six Figures

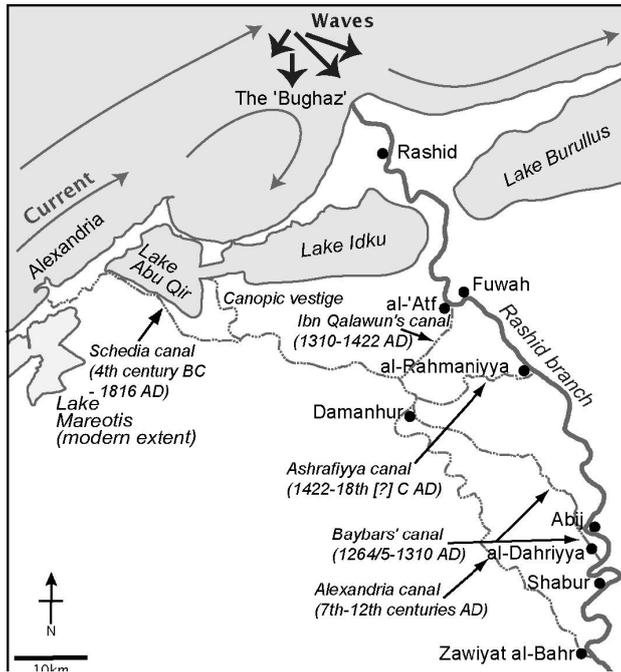


Figure 83: Medieval connections to Alexandria.

After J. P. Cooper, 2012, figure 2.

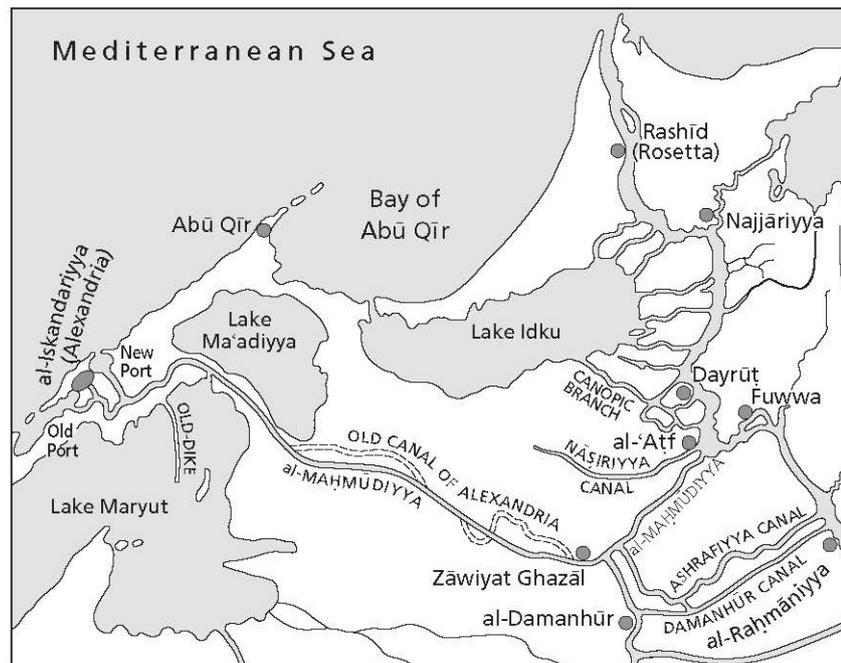


Figure 84: The Al-Maḥmūdiyah canal in the early 19th century. After Mikhail, 2011, map 6, p 244.



Figure 85: Postcard of an image of the collection basin, and the docking space in Alexandria at the end . CEAlex.of Al-Maḥmūdīyah



Figure 86: Sailors on the Al-Maḥmūdīyah tracking and punting sailboats at the end of 19th century. After Alexandria 1900 on Facebook.

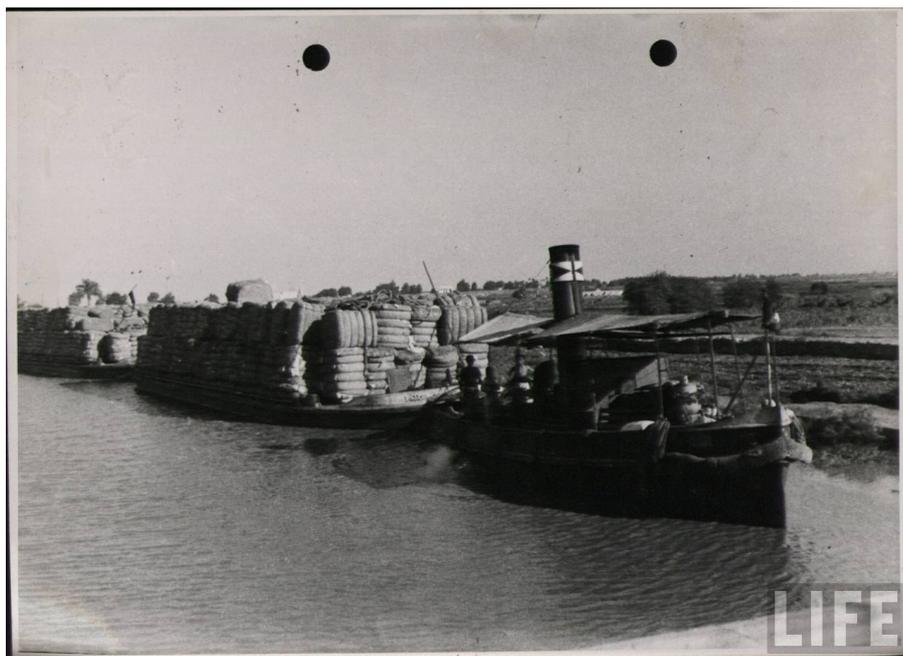


Figure 87: Tugboats towing canal barges filled with cotton, end of 19th century. Unknown Date. Life Magazine.



Figure 88: The water locks at the harbour entrance, photo by Zangaki 1870. University of Chicago.



Figure 89: Another view of the Harbour entrance and water lock with tender boats waiting to be loaded. Pascal Sebah around 1870s. Getty Research Centre

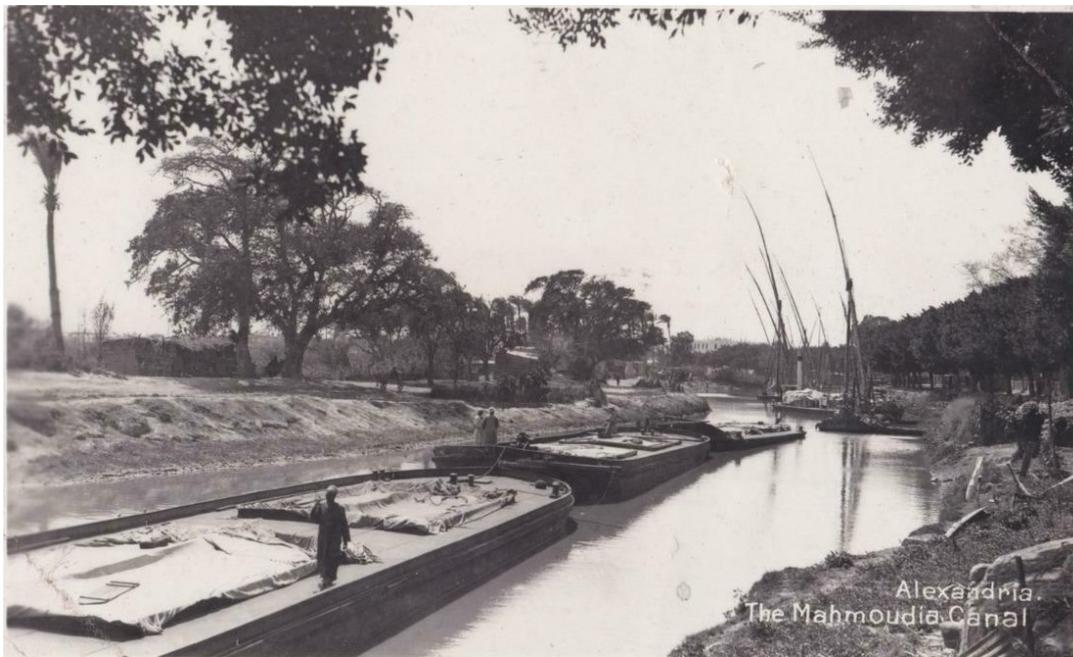


Figure 90: Sandals being tugged on the Al-Maḥmūdīyah Canal. Unknown Date. Alexandria 1900 on Facebook.



Figure 91: Royal boats on the Suez Canal during the opening of the Canal, Pascal Sebah.



Figure 92: The TC&S Landing quay and shipyard at Bulaq. Thomas Cook Archives.

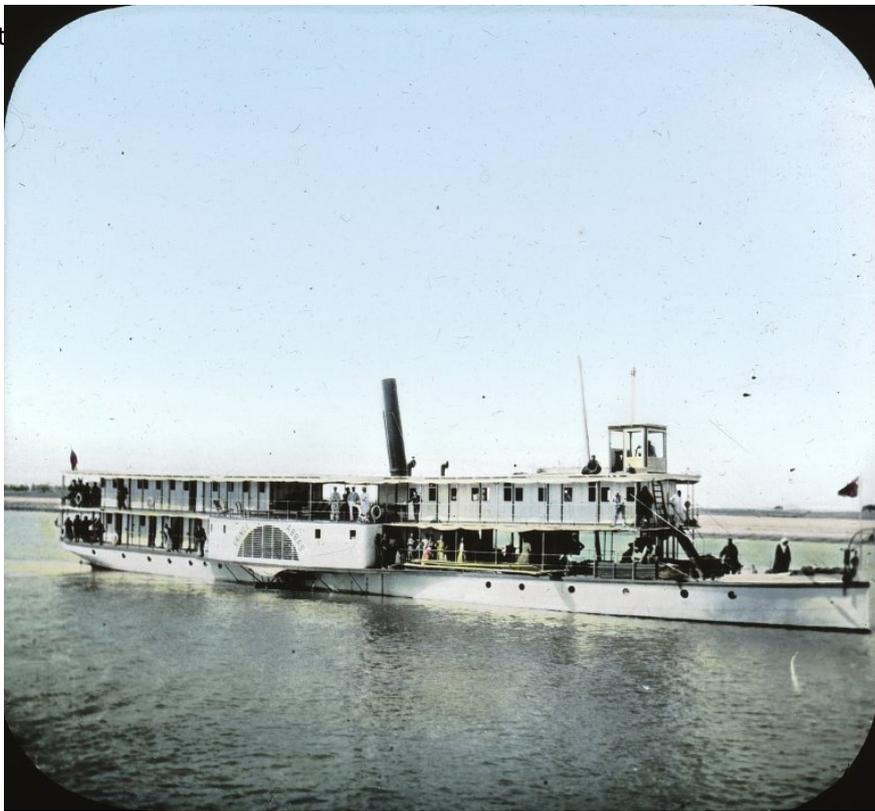


Figure 93: The Prince 'Abbās Steamer. Taken from a Glass Slide.



Figure 94: Ramses The Great Steamer in 1893. Brooklyn Museum Archives.

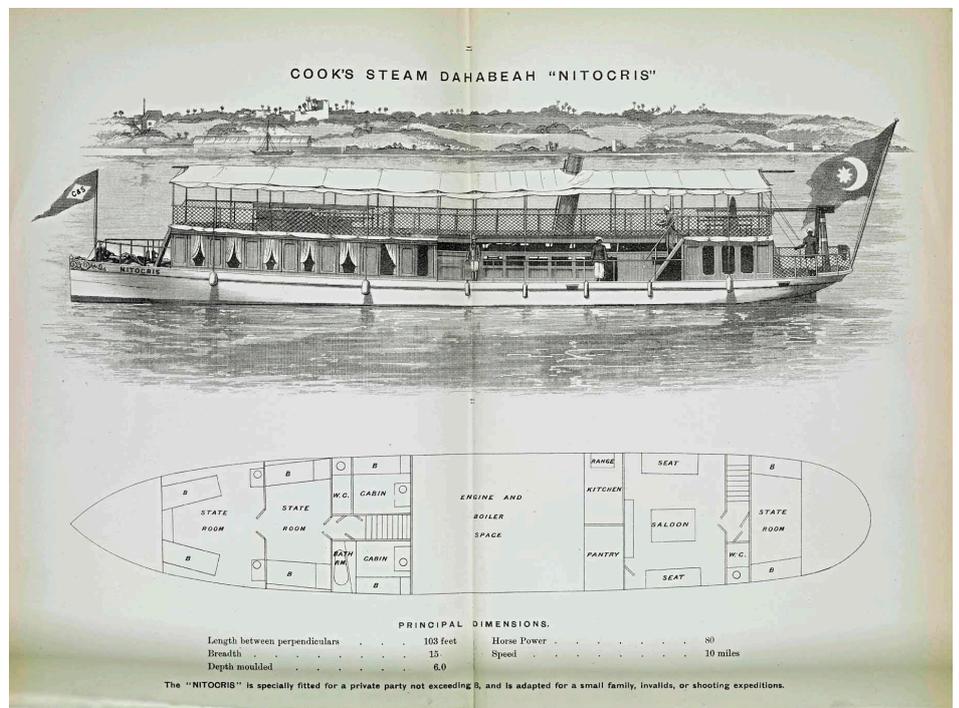


Figure 95: Cook's Steam Dahabiyah. Thomas Cook Archive.

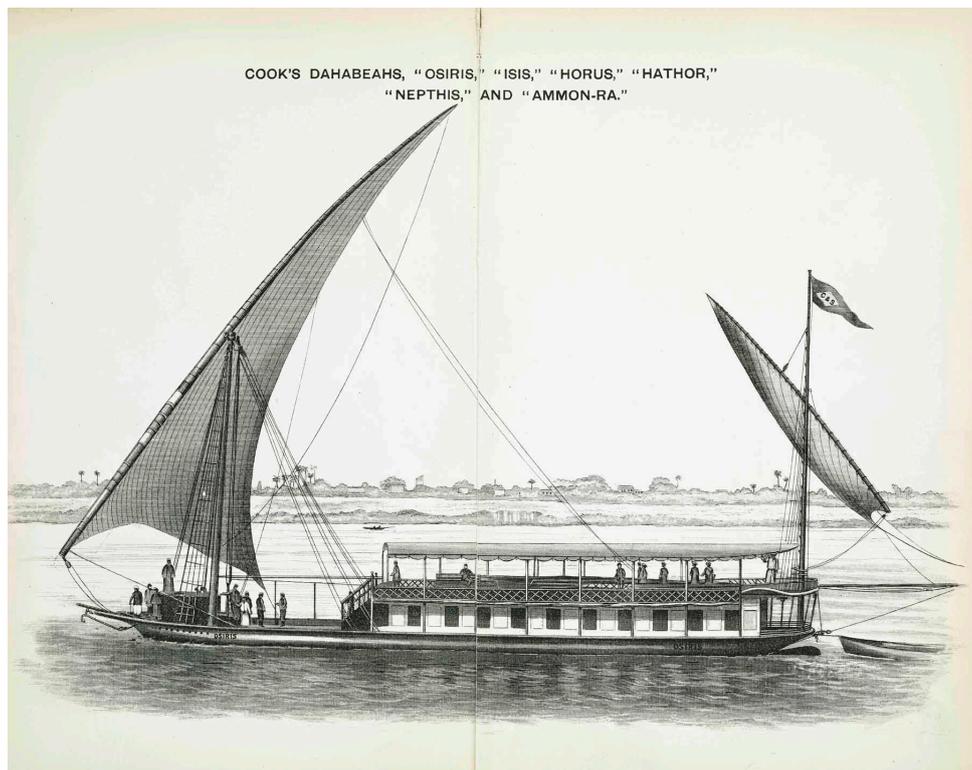


Figure 96: TC&S New Dahabiyah on the Nile. Thomas Cook Archive.

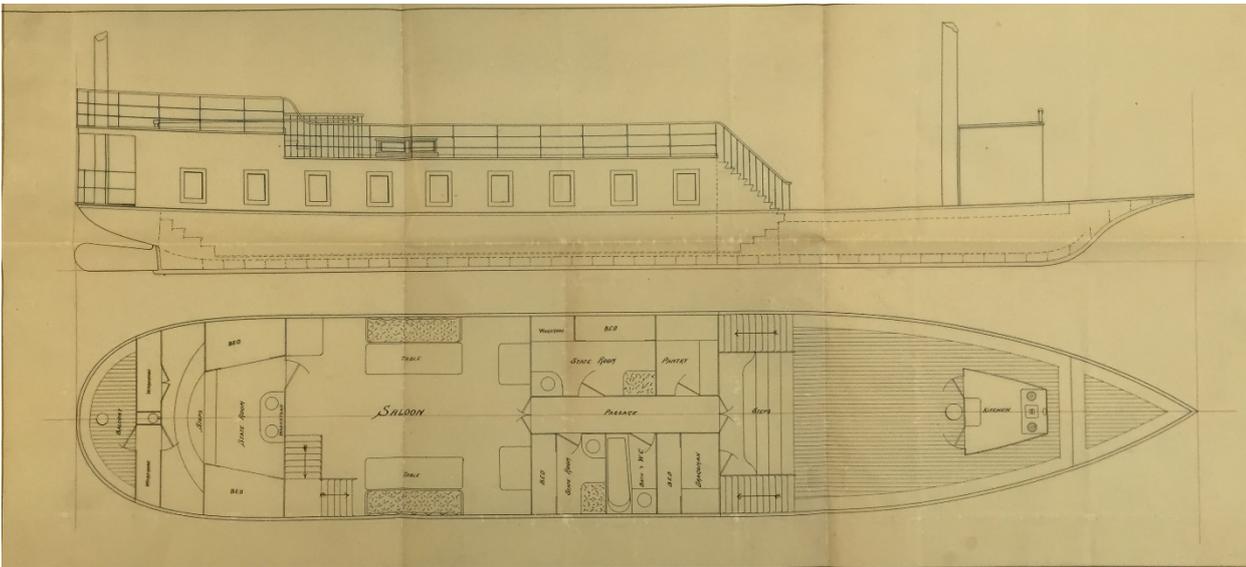


Figure 98: Plan of the Clyde-built dahabiyah 1893. Thomas Cook Archive.

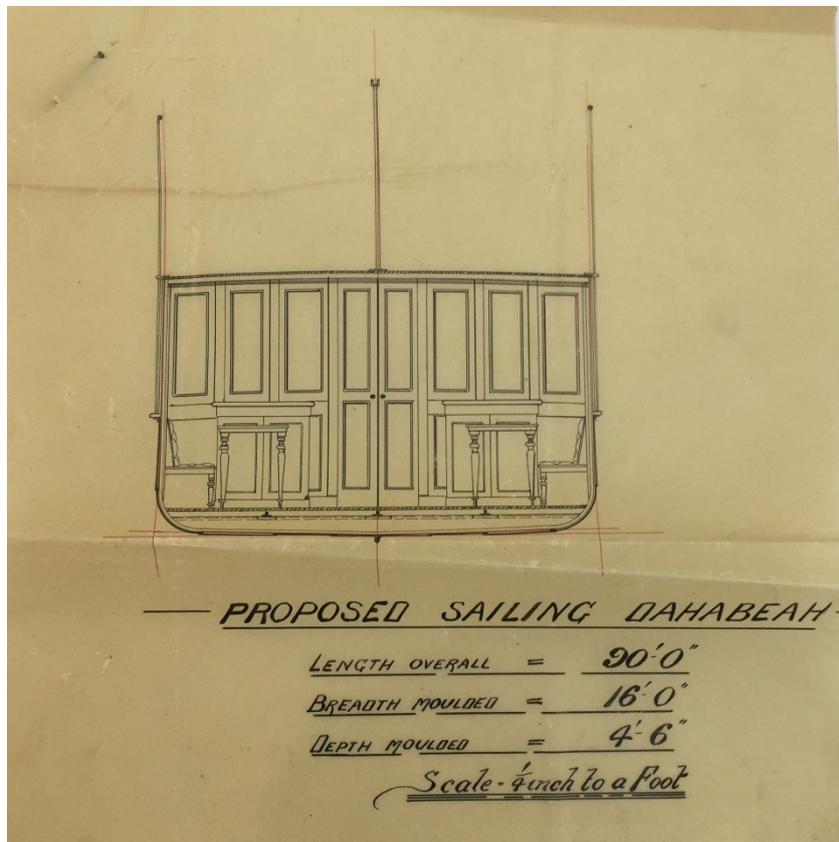


Figure 97: Stern and dimensions of the Clyde-built dahabiyah 1893.

Thomas Cook Archive.

Chapter 7 Wood Vs Metal: materiality matters during the early years of 20th Century

7.1 Introduction

By the end of the 19th century, Nile boats experienced a dramatic change in hull material alongside the introduction of steamboats on the Nile. This transformation began towards the end of Mohamed Ali's governance of Egypt and reached its peak during the early years of the 1880s with the British invasion of Egypt. The importation of technological advancements in boating, particularly British inventions and modifications, was a primary reason for the significant changes in Nile navigation in Egypt during the latter half of the 19th century.

As the last chapter discussed, the importation of steamboats to Egypt and the advancement of new materials for constructing these boats aimed to fulfil the desires of European aristocrats, who had long dreamt of sailing the Nile as Cleopatra and Mark Anthony did thousands of years ago, much like other royals from various European kingdoms throughout the lengthy 19th century. However, the last chapter did not address the changes that affected other types of Nile boats.

This chapter comprises two distinct sections. The first section discusses a list of the newly introduced boat types and rigging styles on the Nile. The second section addresses changes that have occurred to other Nile boats, primarily the cargo boats, in terms of hull designs and rigging techniques. This chapter is based on a number of studies of Nile boats and a series of observations by the researcher, aided by the photographic database collected throughout the research project.

Drawing on literary resources from the 19th and 20th centuries, most sources mention a handful of boat names. The boat type most frequently mentioned and best recognised by travellers was the dahabiyah. A generic name for sailboats on the Nile that appeared during the second half of the 19th century was felucca, derived from a Mediterranean type of galley. The third was the qyassa, which has been recorded by numerous sources, including official and governmental ones.

Chapter 6 included a discussion on the use of the conventional design of a dahabiya, now constructed with new materials. These materials were more durable, easier to maintain, and had a longer lifespan than wood. Steel hulls became preferred on the Nile to align with European tastes, offering larger and more reliable hulls for the same boats already in operation on the Nile.

During various periods of struggle and conflict, the government outfitted ordinary boats to serve as support vessels for the navy or army. The use of native Nile boats in campaigns in Egypt dates back to the Napoleonic invasion. Both French and British forces adopted these working Nile boats, not merely as auxiliaries but also as what Breene (2018) refers to as Native Gunboats. These gunboats were employed during the French and British campaign in Egypt from 1801 to 1802.

Two types of Nile boats were utilized during the period from the start of the French invasion in 1798 until the end of the Second World War in 1945. The Djerme¹³ and the Qyassa. As discussed in chapter 5, the forementioned Nile boat types were the main cargo transporters in Egypt. Not just on the Nile itself, but also the Mediterranean coast between Alexandria and Rosetta, and furthermore to the Eastern Mediterranean. In describing the Qyassa, or as he named it Gaiassa of Egypt, the British traveller Herbert Warington Smyth (1906: 289), he stated that the Qyassa *“proved its utility as an engine of the British Empire. It has taken a brave and arduous part in three campaigns, and shares with the mule, the elephant, and the camel, the distinction of having ministered to the wants of the British soldier on the march.”*

Smyth has no specific accounts about the three campaigns. However, one is confirmed to be the campaign of 1896 to retrieve control over Sudan after the failed mission of General Gordon and the fall of his relief mission in 1884-1885. The General Kitchener campaign of 1896 utilized the use of Qyassas as part of the Gunboat flotilla that sailed upstream to face the Mahdi's and retrieve Khartoum (Figure 99; Figure 100). Another was the utilization of Nile boats during the First World War, around 1915 (Figure 101). There is no further information about the specific modification that was introduced to the Qyassas, only a total list of Nile boats that were stationed under the Sudan Government Fleet in 1903, compiled by the Melik Society. The Melik was one of the steamer gunboats that was part of General Kitchener's flotilla in Sudan. It was built by Thorneycroft at Chiswick, then shipped in sections on the Nile, and assembled in Abadiya in 1898. Then, after its service, it became the clubhouse of the Blue Nile Sailing Club in 1926¹⁴.

¹³ The Djerme's use in military campaigns are further discussed by Breene, M. L. (2018). Outfitting the country boats as gunboats: indigenous vessels and the Egyptian campaign, 1798–1802. *Journal for Maritime Research*, 20(1–2), 105–117. <https://doi.org/10.1080/21533369.2018.1528718>

¹⁴ Full list of the Sudanese flotilla can be found on The Melik Society website: <https://www.melik.org.uk/discover/nile-gunboats/send-a-gunboat/>

The Qyassas, or as they are recorded, Gayasas, included 45 boats between Aswan and Halfa, 15 on the Dongola Reach, and 67 on the Khartoum Reach, totalling 127 Gayasas¹⁵ under the Sudan Government Fleet in 1903 (Figure 102; Figure 103)

This chapter is not intended to discuss the military campaigns in Egypt but to illuminate the introduction of new types of boats and rigging on the Nile during the latter half of the 19th century. Furthermore, it aims to highlight the changes in hull shapes, materials, and rigging on the Nile from the British invasion in 1882 until the end of the Second World War in 1945.

7.2 New designs, conventional materials

Despite the use of local Nile boats or the utilization of native boats as gunboats during the different British military actions in Egypt, a new design of boats was introduced in the masses in 1884. The modified Whalers, Whaleboats, and Admiralty whalers were used on the Nile during the General Gordon Relief Expedition. Sir William Francis Butler (1887) published his personal narrative of the Nile Expedition of 1884-1885, titled "The Campaign of the Cataracts". Which included a full detailed account of the design, manufacture, transportation, and use of Whalers¹⁶ as the main carrier for soldiers on the Nile during the campaign.

This section includes a detailed account of the introduction of Whalers on the Nile for the first time in 1884-1885 and the subsequent introduction of other types of small sailboats on the Nile by the Royal Navy during the subsequent years. The first patch of Whalers was built in a British shipyard. However, on later dates, orders of whalers were issued to local boatbuilders on the Nile in both Egypt and Sudan for the use of the British Admiralty in the country and elsewhere in the region.

Unfortunately, the researcher could not locate any photographs of the Expedition. The only visual resources available are drawings and illustrations published in various British newspapers and books that documented them.

¹⁵ Winston Churchill, 1902, the river war, mentions the "Gyassas" and also "Nuggurs", the native sailing crafts were organized as auxiliary boat service beyond the second Cataract by General Kitchener. Supply Gyassas were protected by Maxim guns.

¹⁶ For new insights on the introduction of whaleboats to the British Navy, Breene, M. (2021). From Jonah to Jack Tar: the integration of whaleboats into the British Royal Navy. *Archaeonautica*, 21, 65–69. <https://doi.org/10.4000/archaeonautica.1175>

7.2.1 Introduction of Whaleboats and centreboards on the Nile

General Charles George Gordon was appointed the Governor of the Equatorial Province by Khedive Ismail in 1874. Gordon Pasha served in the province for five years to restore order, contain rebellions in the region, and enforce the Khedive's newly signed treaty to abolish the slave trade. After fulfilling his duties, Gordon left Sudan but was called back to duty in 1883 when the British and Egyptian governments agreed to evacuate British and European nationals from Sudan, as they had been under threat from the Mahdi Revolt for over two years. In his efforts to protect the city and its residents, Gordon eventually found himself surrounded by hostile forces (Syrhnk, 1896, p. 491; Winston Churchill, 1902, p. 14).

Both the British and Egyptian governments were hesitant to deploy additional troops to Sudan. Nonetheless, mounting public pressure on the British government ultimately led to the Gordon Relief Expedition in the autumn of 1884. The expedition's strategy involved dispatching a River Column of infantry in boats starting from Nubia, making their way towards Khartoum, while the Camel Corps would flank the city from the desert (Sirkhank 1896: 491 - 518; Churchill 1902).

As mentioned earlier in chapter 6, Johan Mason Cook was entrusted by the Government to transport troops and boats all the way up to the Second Cataract. However, the mastermind behind the full preparation of the River Column was Sir William Butler, who in the early days of 1884 conducted several studies to determine the best method of conveying the Anglo-Egyptian troops up the Nile to Khartoum. (Butler, p. 1887).

7.2.1.1 Whaleboats on the Nile

7.2.1.1.1 Butler Whalers

On the 4th of August 1884, Sir William Butler sent a letter from Plymouth to Lord Wolseley, commander in chief of the British forces in Egypt and the commander of the Nile Expedition. The letter included a detailed account of the reasons behind Sir Butler's decision to use British-made, modified whalers as the primary mode of transport for the infantry on the Nile.

Butler suggested building 400 boats, 26 to 32 feet in length, 6 to 7 feet beam, and 18 to 24 inches of draft when loaded with 12 men and 100 days' worth of supplies and ammunition. The Whalers will be manned by a group of native Canadian "*voyageurs*" who have already helped Butler and Wolseley during the Red River Rebellion in Canada back in 1870. Once the War Office gave the green light to Butler to execute his vision, he started planning and conducting trials of this new type of boat that was not yet built.

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He had already decided that boats would not be sourced from Egypt; instead, they would all be built in Britain. The boats he chose were a modified version of the service boat or a ship's boat. However, upon close inspection of the standard Admiralty ship's boat, Butler found it too large and heavy for the intended task. He then searched the boat sheds at Portsmouth dockyard until he came across a whale-gig. The boats measured 28 ft by 5 ft 6 in and had about 2 ft of depth (Figure 104).

The British navy employed whaleboats as a type of ship's boat in 1861. The whale 'gig' featured a flared stern and an upright stern post positioned at a near right angle to the keel. It was propelled both by rowing and sailing, equipped with a single mast and a lug sail. Subsequently, it was replaced by designs featuring two masts with dipping lug sails (Breene, 2018, 2021, p. 65).

Butler ordered the construction of a trial specimen boat in Portsmouth and equipped it with the necessary ammunition and materials, along with 12 men. The boat was then tested; it was rowed, sailed, and towed. The boat was able to manage 4 tons of weight, with a draft of 18 inches and a freeboard of 16 inches. The boat itself weighed about half a ton, featuring two lugsails and ten oars. It measured 32 feet in length, 7 feet in beam, and 2 feet 8 inches in depth (Figure 104).

Butler had already commissioned the construction of 400 boats when the office decided to increase the number of Anglo-Egyptian forces joining the Nile Expedition. Consequently, a further 400 boats were ordered to be built in 22 shipyards across Britain. Additionally, 400 Canadians and Indians were transported to Egypt, along with several Kroo men from West Africa, to serve as crew members for the boats (Figure 106).

In September 1884, John Mason Cook was contracted to convey Butler's Whalers, Voyageurs, soldiers, ammunitions, and supplies up to the Second Cataract in Wadi Halfa. Boats were shipped to Alexandria from Britain, then were hauled on trains from the Qabbari train station in Alexandria to Asyut. In Asyut, the boats were towed by TC&S steamers until the Second Cataract. The 800 whalers were delivered to Wadi Halfa, along with 18,000 troops and 40,000 tons of supplies (Butler, 1887, p. 44; Humphreys, 2015, pp. 73–81) (Figure 107).

The Canadian contingent's job was to safely navigate the whalers through cataracts between Wadi Halfa and Korti near the 4th cataract. Where the base camp of the Anglo-Egyptian forces. Then the Canadian contingent was divided into two groups, the first was to return North, and less than 100 Canadians volunteered to continue in service and head South along with four battalions in 217 boats towards the next checkpoint at Abu Hamed. However, just a few miles away from their destination, a report of the falling of Khartoum and the death of General Gordon arrived at the forces. It was then Butler and his remaining 215 whalers started their way back North towards the basecamp in Korti (Butler, 1887, p. 345; Benn, 2009, pp. 220–228) (Figure 109; Figure 108).

The design of the whalers by Butler gave them a great advantage of carrying supplies of the whole Anglo-Egyptian forces. The boats proved their worth in crossing all the different obstacles along the Nile. Butler was very proud of his work, and in his memories, speaks about his whaler No. 387 and how it *“riding the big billows like a sea-bird”* (Butler, 1887, p. 182). In other places he states that in just 10 days, whaler No. 387 covered 200 miles of an unpassable area of the Nile. Finally, by the end of its mission, whaler No. 387 had almost covered 800 miles, and was only taken out of water twice for repairs¹⁷ (Butler, 1887, p. 234) (Figure 110).

There are no accounts of what exactly happened to the remaining of the 800 whalers that were specifically built of the failed Nile Expedition. However, John Mason Cook and his son joined the first stage of the Nile Expedition. They rented a dahabiyah from a local Sudanese. However, the description of the boat is similar to the canja type of boat (Figure 112). The Cooks reached Dongola, south of Wadi Halfa, and then they decided to return along with the first party of the Canadian Voyageurs Contingent on one of the whalers (Humphreys, 2015, pp. 79 – 81). Thus, it is assumed that the majority of the whalers headed North towards Asyut, but no information about their fate could be found.

7.2.1.1.2 Montagu Whaler

The Montagu Whalers were a modification of the Royal Navy Whaleboats, or what was known as the whale gig of 1878 (Figure 111) and a method of standardization of the ship’s boat during the end of the 19th century. As what happened with the Nile Whalers, or the Bulter whalers, the Montagu whalers were introduced in 1890 by Admiral Montagu. Victor Alexander Montagu, a decorated Royal Navy officer, who after a long history with the Navy was retired in 1880. When he took up yachting and started working on designing and constructing of new or modified sailboats.

The Montagu Whalers are clinker build, 27 ft, double-ended boats. Its keel is slightly cambered, and its sternpost is curved. The boat was broader and deeper than the whale gig. One of the big changes in the Montagu whaler was the addition of a dropkeel (Figure 114). The dropkeel meant that the sail area could be increased. The boat was double-masted, with the mainmast carrying a foresail and a dipping lug, about 5 ft longer than the foremast.

¹⁷ Louis Jackson, Captain of the Canadian contingent in his memoir published in 1885 states that *“Whoever designed the boats struck the right dimensions perfectly. Each boat was made to carry ten days’ rations, including everything in the above list, for a hundred men, ten men with kits and accoutrements, and about half a ton of ammunition.”*

Since 1907, the Montagu Whalers became standard Admiralty ship's boat. It was used on almost all ships of the Royal Navy. It became very famous between the troops and a series of whalers' racings took place. The boat was used for both military and recreational use. As it was an official Admiralty boat, more detailed information about this type of boats is available (Figure 113).

The introduction of the Montagu Whalers to the Nile occurred during the Second World War. Egypt witnessed military action during WWII. Once again, Thomas Cook & Son played a role in the emergence of whalers on the Nile. This time, the Montagu Whalers were constructed by Egyptian boatmen on the Nile at the TC&S boatyard in Bulaq in 1942. It is not clear why those boats were built in Egypt. However, from studying the Nile photographs during the 1940s, a series of photographs were taken in two of the main boatyards in Cairo. The Thomas Cook & Son, and The Anglo-American Nile Tourist Co in Shubra. Both boatyards were ordered to supply a number of small and medium Allies boats, including the Montagu Whalers and a type of wooden Launch called the Fairmile. The Fairmile was designed in UK by W.J. Holt. The idea was to have prefabricated frames that could be assembled on the keel backbone with semi-skilled labour¹⁸. In a series of photographs obtained during the Thomas Cook Archive visit in 2017, the researcher noticed a large number of whalers were being constructed at the TC&S boatyard in Bulaq (Figure 116).

The interesting part was that during the phase of collecting Nile boat photographs, a series of photographs from the Imperial War Museum Archives were found. The series is titled (Motor Launches for the Royal Navy were built in the Middle East). The photographs were dated August and September of 1942. The process of building the boats of the Fairmile type can be followed. From lying down the prefabricated frames and laying the keel, to the planking of the Mahogany skin on the frames, all the way to launching the boat on the Nile. After launching, the Fairmiles were then towed through the Sweet Water Canal (Ismā'īliyah Canal) all the way to Porsaid to be outfitted with motors and guns on the Suez Canal.

Photographs from both the TC&S archive and the IWM archives are almost identical. However, the photographs at the Thomas Cook Archives were more interesting for the props of this research, as they included shots of the whalers stand by on the Nile after being built (Figure 115). Another interesting notice was on one of the photographs of the Fairmile Lunches. The boatbuilders all look Egyptians, in one of the photographs, the Egyptian boatbuilders did what they were traditionally doing when laying a boats keel, they wrote "In the name of Allah, Mashaa Allah" on the stempost of the boat (Figure 118; Figure 119).

¹⁸ <https://www.wrightsons.com.au/world-war-ii-the-fairmile-story/>

The Fairmile B type motor launches was ordered to be built in Egypt and many other countries during the WWII. A compiled list by a website project called Navypedia¹⁹, includes the numbers of Fairmile launches that were commissioned at both the Anglo-American Shipyard, and the Thomas-Cook and Son shipyard. Both shipyards were in Cairo, the AA shipyard located in Shubra, at the entrance of the Sweet Water Canal, few km to the south, the TC&S boatyard, the biggest in the country used to exist. Total of 16 Fairmile Launches were built at TC&S, and 31 at AA. Other boatyards in Egypt built couple more launches each, making the total launches built in Egypt to 51 (Figure 120; Figure 121; Figure 122; Figure 123).

Returning again to the Montagu Whalers, one of the most important and drastic changes on the whale gig was the introduction of the drop-keel or the centre-board. According to Folkard (1870, p. 86) sailing boats equipped with centre-boards were introduced to England in 1852. The introduction was done during one of the sailing races, when an American boat named “Truant” showed unmatched superiority when racing windward and scudding. This clipper type racing boat was equipped with a centre-board. The centre-board then started to be adopted by British boat makers, and it was particularly famous among the broader and shallower boats, as the extended keel giving these flatboats the ability to manoeuvre and stability when sailing windward. At the same time the retractable keel means that boats fitted with a drop-keel are less prone to the risk of grounding (Folkard, 1870, p. 87).

As the Montagu whalers became an official part of the Admiralty Seamanship training, Allied troops across the world started using the whalers in both naval and recreational proposes. These troops who were based in Egypt, also have used the Montagu Whalers. However, the researcher could not find more details about the topic until now.

7.2.1.2 Mediterranean Felucca

The name Felucca is the most used name for describing Egyptian Nile boats. More than any other names of boats that were recorded during the 19th and the 20th century. However, previous studies did not try to better understand the origin of the name, as well as recording the type of modern-day Nile vessel that is called Felucca. The only study of the etymology of the word Felucca was done by Abdelmajid El Houssi in 2005, originally the term in French felouque, which means the small boat of the Mediterranean, which was sailed and rowed. And that the terminology had alterations during the 16th and 17th century. El Houssi (2005, p. 15) argues that the word is

¹⁹ https://www.navypedia.org/ships/uk/brit_c_f_fairmile_b.htm

borrowed from faluca in Spanish, which in turn was derived from 16th century Catalan faluca or faluga (Figure 125).

In order to better understand the origin and evolution of the Egyptian Nile Felucca this section will be divided into two parts. The first dealing with the origin of the Felucca type boat, and its use across the Mediterranean during the 17th and 18th centuries. Then the second part will be focusing on the study of a new type of Nile boats that emerged during the 19th century, and that did not exist previously.

The origin of the word Felucca is sometime associated with the terminology of boat in Arabic, the singular name of the word Fuluk, or Falayik, which plainly means a boat or a ship. The terminology was also given to certain Western Mediterranean lateen rigged boats. However, El Houssi (2005, p. 21) argues that the word was a loan from 12th century French fictional to the Arabic language through Italy, and that there is still a lot of missing information in the research about the Arabic word itself. Folkard (1901, p. 399) describe the Felucca as a boat similar to the Maltese Galley which were derived from the 16th century Venetian galleys. The Feluccas were a smaller version of these galleys, rigged with three masts holding lateen sails. In addition to the sailing, the Feluccas were also rowed. The Mediterranean Feluccas were double masted with Lateen sails. With massive yards that are tapered at the outer ends.

Smyth (1906) includes a description of a lateen sail configuration that is called the felucca r, w Which was a three-masted rig that was very much predominant on the Mediterranean (Figure 124). He also compares the felucca rigging to the gaiassas of the Nile. In his book, a drawing titled "Spanish Felucca" looks very similar to the Nile sailing boats, with only one difference that was not included on the Nile, that was the topmast (Smyth, 1906, p. 262).

7.2.1.2.1 Egyptian Nile Felucca

The Egyptian Nile felucca is meant by a specific type of leisure sailing boats, which is being in use specifically in Aswan. This felucca type appeared in the photograph of the 19th century sometime during the 1880s. It was mainly used for short trips across Aswan city and the Nubian villages near it. Most photographs withn type Nile Felucca are of tourists around the island of Philae, south of the Frist Cataract. However, by the 20th century, the familiar shape of the Aswan Felucca that still exists until today started to emerge on the photographs. Sadly, none of these boats have been studied or described before, and thus all the description and typology of the Aswan Felucca is based on photographic resources.

From studying the photographs of Nile boats in and around Aswan it was noticed that there are two distinctive sailing vessels that were utilised for the same purpose, which was tourism and leisure. The two variations of the boat thus will be named Felucca Type A and Felucca Type B.

7.2.1.2.1.1 Felucca Type A

The Felucca type A is the oldest of the two types. It was not recorded before in any of the sources or resources that was used during this research. The oldest example in the photographic database is from the University of Chicago Archive (Figure 127). The photograph was taken by one of the Zangaki Brothers, who were famous photographers in Egypt. The photograph dates to 1865, which is not a confirmed date. However, Adelphoi Zangaki were active until 1889, thus it is safe to rely on the date provided on the photograph as being accurate enough. The boat in this image is moored on the bank of the Island of Philae, at the foot of the Trajan's Kiosk. This view was favoured by almost all photographers during the 19th century, such as Beato, Frith, Good, and many others. However, none of them included this type of vessel in their images. Normally this type of image would include a canja or a dahabiyah (Figure 126).

This type of boats resembles a miniature dahabiyah. However, instead of the cabin, there was a fixed awning towards the stern of the boat. The boat had the famous gayassa type bow, and a single mast with a lateen sail. The boats included 2 to 6 oars. The awning occupies 1/3 to 1/2 of the total length of the boat (Figure 128).

The hull was coloured in three colours, an autochrome photograph that dates to 1914, taken by August Leon, gives us certainty of the colours used on these boats. As they no longer exist now on the Nile, there is no other way to be sure except through the photographs. The Felucca Type A was coloured Green, White, and orange, from top to bottom (Figure 129). Currently boats on the Nile are dual coloured with red and white, with just a line of green on the gunwale, the orange being from the keel all the way to the bilge turn, then the white starts from the gunwale and throughout the whole boat, white was the main colour as it reflects the sun, making setting inside the boat under the blazing Aswan sun a more tolerable matter. Combined with the awning, the boat gave the visitors an opportunity to enjoy their short distance cruise on the Nile through the different islands around Aswan.

From studying the photographs, the crew of the Felucca A equals to the number of the oars onboard, plus the captain on the tiller, and at least one guide (Figure 130). Other than the oars, each boat carried a landing plank, which is still being used until today on the Nile. The boat was decked towards the aft, and a U-shaped seating bench is arranged for the visitors. The midship is not decked and is furnished with crossbeams that are used as rowing benches. The Rudder of the

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vessel is similar to every other Nile boat, however, unlike the qyassa, the tiller is almost as long as the rudder blade in length (Figure 131).

The rigging of the type A felucca is a single-masted lateen rig. The foremast is not racking forward. On top of the mast a tapered yard that is longer than the total length of the boat carrying it. The standard Nile boats rigging configuration can be found in the felucca, the full technical terminology and its equivalent in modern Arabic will be discussed further in section 3 of this chapter when discussing the rigging evolution of the qyassa as a case study.

As mentioned previously in Chapter 4, the Aswan Dam was completed in 1902, since that time, the inundation was being kept in the reservoir southern of Aswan Dam, leading to the submergence of Philae Island during the inundation season in the Summer. This actually did not deter the tourists from exploring the monuments in Philae, on the contrary, the small Felucca boats were perfect for navigating through the reservoir giving the explorers a closer look at the hieroglyphics carved high on the temple's walls and (Figure 133; Figure 132). The Felucca Type A was also used further South at Abu Simbel temples. However, no photographs were found that include this type of boats anywhere Northern Aswan.

7.2.1.2.1.2 Felucca Type B

The second type of felucca, which is also very famous in upper Egypt, with concentration in Aswan. The Felucca type B is what is being seen today on the Nile in upper Egypt, conveying tourists across the Nile and around the islands. This type appears to have been influenced by the British invasion in Egypt as this type of boat is the only one that includes a drop keel or a centre board, known as "*Suqqāth*". Nile boatmen beyond the cataracts have known some interesting techniques to safely navigate through strong currents and to keep their vessel steady. According to Smyth (1906, pp. 297 – 298) that ancient Egyptians adapted skills of Nile drifting, and he talks about Herodotus and the earliest account of a drogue, where the boatman attached a stone sinker to the boat, which is towed deeply behind the boat in order to keep the course of the boat straight when travelling down-stream. This same method is still being done by modern boatmen but instead of the stone, they drag a sort of heavy chain behind the big cargo boats or qyassas.

However, the drop keel of the Nile felucca type B is the substitute of this old technique. Somers Clark (1920, p. 6) mentions that this type of modified Felucca started to appear on the Nile around 1904. He calls this type "the London" with its lugger rig, centre board, and modified lines Figure 137. The earliest example of Felucca Type B photograph dates back to 1914 by August Leon (Figure 134). Another change also that was introduced was that the rigging of the felucca became a settee rig. A boom was added to the sail, and the triangular shapes lateen sail was cut (Figure

135; Figure 136). The introduction of the lugged settee rig might be for the ease of the sail fewer boatmen. The modern-day felucca is normally operated by one boatman, while the Type A used to have at least 4 boatmen. Another rigging technique that was not apparent on any of the other boat types was the use of a mainsheet horse at the stern of the boat. This yet again confirms that the new additions to the boat was made to help reducing the number of boatmen needed to navigate the vessel.

The average length of Felucca B type is 6 meters, while its average width is 1.8 meters. The widest part of the hull is at the midship, where the drop keel starts. The hull is carvel built from local wood, mainly acacia niolitica. During the first fieldwork in 2017, a number of abandoned wooden Feluccas were observed in Aswan (Figure 138; Figure 139).

As far back as 2012, when I conducted his first fieldwork during my MA programme at Alexandria University, most of the boatmen in Aswan were abandoning their wooden feluccas and purchasing modified iron feluccas of the same shape and size. Thus, the Felucca Type B outlived Type A. Furthermore, the shift in building material during the 20th century has enabled this type of boat to endure longer and remain in constant use on the Nile to this day. (Figure 140; Figure 142).

7.3 New materials, conventional designs

As discussed previously in Chapter 5, the primary vessels on the Nile that appeared in all sources were the qyassa type boats. They were regarded as the working boats of the Nile during the 19th and 20th centuries. This section is dedicated to the study and analysis of the qyassa type Nile boats. The hypothesis behind this section is that the qyassas existed for a period that extended beyond the research timeline. As mentioned in Chapter 5 and Chapter 2, the initial data regarding Nile boats, their tonnage, and rigging were contained in a one-page table in the description of Egypt (Figure 5).

This section will include further analysis of the qyassa type, starting from the forementioned table, and track the changes that affected this type of boats during the 19th, 20th and 20st centuries. This section is divided into two sub-sections, the first dealing with the hull shape of the boat named qyassa, its sizes, modifications, and use. The second sub-section will be dedicated to giving a baseline of the qyassa rigging, then trace the change that was introduced to it through the 19th and 20th centuries, when the majority of change happened.

7.3.1 Hull Shape

As the wooden hull qyassas are no longer exist on the Nile, this part is based on a number of research papers and books about the topic of Nile boats. Two researchers have dived deep into the boatbuilding traditions of Nile boats, neither of the two had a maritime or boatbuilding background before conducting their research. The two researchers are Georges Séraphin Colin²⁰ (1893-1977) and Hag Ahmed Youssef Moustafa²¹ (1912 – 1999) both had spent months at the

²⁰ Colin was Philologist and historian. Researcher and diplomat. Holder of six diplomas from the School of Oriental Languages (literal Arabic, oriental Arabic, Persian, Turkish, Abyssinian, Malay). He spent two years hosted at the Institut Français d'Archéologie Orientale IFAO in Cairo, where he was conducting research about boatbuilding terminology in Egypt, and he left us one of the most complete works about the topic to-date. His three-part article published at the Bulletin De L'institut Français D'archéologie Orientale (BFAO) between 1918 and 1922. In part II of his publication, Colin decided to focus on the two main docking places in Cairo: Rod El Farag and Masr El Atiqa. Between 1920 and 1921, he collected all terminology of boatbuilding, navigation, and boatmen on the Nile. He aimed at "bringing together the elements of an Arabic Lexicographical monograph" and he thought that what is believed as one of the oldest traditions in the country, Nile Navigation, is a suitable case study for this lexicon. However, he concluded that it is not the case, and that modern day Egyptian boatmen are not the keepers of the Ancient Egyptians' boatbuilding knowledge.

²¹ Hag Ahmed Youssef was chief of the restoration department at the Egyptian antiquities service, who in 1954 was entrusted with the mission to reconstruct the Khufu ship. Before he starts the work on the boat's timber, he started his own research in becoming a boatbuilder. Hag Ahmed already a talented carpenter who have been working on wooden antiquities for so many years,

boatyards of Cairo, trying to understand the boatbuilding traditions of their perspective modern-day Nile boatbuilders. However, neither of them knew anything about boatbuilding before they've embarked on their journey recording the 20th century Nile boats.

The data that is published from the work of these two researchers will be the foundation of this section. Colin (1920) drawings of the qyassa along with the detailed account of technical terminology in Arabic and French are incredibly detailed. The Arabic terminologies are still being used until today among boatmen on the Nile. Sadly, Lipke (1993, pp. 3–5) only published a small account of the work conducted by Hag Ahmed Youssef. However, it includes images of top view and side view of the quarter size model of a qyassa that Hag Ahmed have built during his apprenticeship under one of Cairo's boatbuilders. Combining the data from these two researchers and adding some details from other Western observers (Folkard, Smyth, and Moore) who published about Nile sailboats, from a technical point of view, can give us a better understanding of this very famous yet understudied type of Nile boats.

Starting with the table from Description of Egypt, the boat type qyassa was written "kayasse". However, there are more than one sub-category of this boat, based on its size, tonnage, and the place where it was used. The focus would be on the second part of the table, which include the boats of Upper Egypt. There were three categories of the kayasse; the Grand kayasse (kayasse kebyr/large qyassa), the Demi-kayasse (Nousf kayassa/ half qyassa), and the Petite kayasse (kayasse soughayar/ small qyassa).

According to the table, the biggest qyassa can carry 60 tons, the half qyassa carries 30 and the small qyassa can carry 6 tons of cargo. Colin (1920, pp. 75–76) describes that the main commercial cargo boat on the Nile is the qayyasa, plural qawawis, and it is with two masts and can carry 100 to 200 ardebs, which is similar to what the Jomard wrote in the description of Egypt. However, Colin continues discussing the names of the boats on the Nile, giving information about the biggest of the qyassa boats on the Nile was measuring 20 to 22 meters, and could carry 100 to 120 tonns, while the medium sized qyassas with 12 to 14 meters, can carry between 50 and 70 tons. Which is not consistent with what Jomard mentioned about the lengths of the kayasse, the largest being almost 15 meters in length, and the smallest was almost 6 meters.

felt that he is lacking the knowledge to undertake the task. So, every afternoon after his work, for three months, he would go down to the boatyard in Cairo and just watch boatbuilders doing their work, taking notes, asking questions, and drawing sketches. Later on he convinced one of the boatbuilders to give him private lessons in boatbuilding, where he built a quarter scale model of Nile cargo boat.

No one has given an in-depth detail on how the qyassas were built except Colin (1920), he follows step by step the ways and methods of how the boatbuilders start their operation. Thus, we will follow Colin through the process of boatbuilding, in order to better understand the hull shape of the qyassa.

7.3.1.1 Wooden qyassas

The qyassa like all the Nile boats is flat bottomed, the keel (etrabel) is made of either a single piece or a several pieces scarfed together. Attached to the keel is the stempost (moqadim) and the sternpost (moakher). The stempost is divided into two parts (badan) and reinforced internally with a triangular wooden piece (butana). Another triangular shaped wooden knee is joining the sternpost (wastaniyah) and the keel (naqrafos el dell). All joinery between the keel and the posts are made with scarfs to reinforce the structure (Colin, 1920, p. 54) (Figure 141).

Frames are then attached to the keel, starting from the stern where the frames that shape the stern are attached, they are called (rabaib), and they create the transom stern of the boat. A series of horizontal ribs (ghumqya) and vertical ribs (shamkhya) are then attached on intervals depending on the size of the boat. There are 5 main crossbeams on the boat which are bigger than the other crossbeams. One at the midship, another one at the end of the first cargo hold, and another one at the end of the second cargo hold. Two more crossbeams are attached one towards the bow in front of the location of the mainsail, and another one at the stern behind the place of the mizzen mast (Colin, 1920) (Figure 143).

From the photographs of boatbuilding, planking the boats were done on a random order. However, two or more longitudinal plank streaks are hammered at first. Then the remaining of the hull is covered with planks bit by bit (Figure 144; Figure 145; Figure 146).

The rest of the crossbeams are then laid and hammered in place. The cargo hold occupies 2/3 of the total length of the boat. The remaining areas are two quarters for the boatmen and the captain. One quarter is at the bow, and another is at the stern. The living quarters are accessed through hatches on the main deck of the boat. The bow hatch is in front of the mast of the mainsail, and the stern hatch is behind the mizzen mast.

The rudders of the qyassas are huge, normally it is 3 to 5 meters long, with a tiller of 3 meters long. *“The rudder is large. Its after edge slopes upwards and forwards from the water, and meets the upper edge at an angle. There is no true rudder head. The upper part of the rudder has a piece of timber lashed on either side, and between the projecting fore ends the tiller is lashed. Wire is often used for this”* (Moore 1970: 116). The rudder is made of a series of longitudinal planks which are attached together with a number of horizontal frames. The tiller is hollowed and attached to

the rudder blade and fixed in place with two pins, on each end. The rudder blade is then attached to the stempost with two or three strong metal hinges (Figure 147).

Some qyassas include a hull extension. Where is a box built on top of the gunwale of the boat in order to accommodate more cargo (Figure 148). Smyth (1906: 295) in describing the qyassa he was on board with a local boatman, he notices that the top strake above and inside of the gunwale is built with planks that was set in dried mud, creating a sort of a coffer dam. This was the fully laden qyassa can have less free-board and more cargo to haul. This bulwark configuration then became a standard addition to the design of qyassas, wooden knees were added to the inside of the bulwark in order to attach it to the deck beams and to enforce the sides of the boat above the gunwale (Figure 149).

7.3.1.2 Iron hull qyassa

Through studying the different photographic resources of Nile boats during the late 19th century and early 20th century, the researcher noticed a dramatic change in hull shape of the most famous cargo boat of the Nile. The black and white photograph were not a helpful tool, as all boats looked similar to each other. However, once a series of coloured photographs were found, a very clear segregation in shape started to appear.

As mentioned earlier in chapter 3, during conducting of the first fieldwork on the Nile, one of the main results of the study was that wooden boats were no longer in use on the Nile between Cairo and Aswan. Iron hulls substituted the wooden hulls for decades. A series of fieldwork visits conducted by the researcher during the MA research (Morsy, 2016) which included photograph of the iron hull qyassa was used to try and understand the change in hull shapes of these boats (Figure 150).

There are two types of iron hull qyassas, the riveted hulls and the welded hulls. Riveted hulls where the boat builders had to rivet each metal sheet on the frames of the boat by hammering both sides of the bolts. The sheets and frames had pre-cut holes to fit the rivets into. Alter on, no accurate date to when this change happens, boat builders acquired the skill of using an welding machine, thus the hulls became more of black smith's job.

As there were no longer any new qyassas being built on the Nile now, it was again the photographs that helped understanding the process of hull shaping in iron sheets. The iron qyassas are built in similar sequence as the old wooden qyassas. The metal I-beam is laid down as a keel, then a series of smaller T-beam and I-beams are then twisted to shape the frames of the boat. All the beams are then bolted together with prefabricated triangular sheet metal (Figure 152; Figure 151). Once the frames are all attached, prefabricated metal sheets are then attached

on the frames, rivets are then hammered to make the hull watertight, giving the boats the same finish and look of planking (Figure 153). On Later dates, probably during the 1960s, welding became popular, thus rivets were no longer being used to build new boats.

As mentioned in chapter 6, the Iron dahabiyah were introduced to the Nile in 1889. However, we do not have the same certainty of when the iron qyassa started to appear on the Nile. From studying the photographs, both Iron and wooden qyassa were being built, used, and sailed together from as early as WWII. The earliest photograph of an iron hull qyassa is by the Australian war photographer, Frank Hurley²², who was based in Cairo between 1940 and 1943. He took a series of photograph of Nile qyassas crossing the open bridge near Cairo, we can distinguish two shapes of hulls. The first boat coming out on the photograph have a different hull shape than the rest of the boats behind it (Figure 154). The iron qyassas were no longer in need of the over hanging stempost to reinforce the bow for when the boats were rounding. As now the new iron hull can withstands being hit by the muddy banks of the Nile without being affected (Figure 155; Figure 156). Another feature that disappeared is the bulwark above the gunwale, as the qyassas are lighter because of their displacement, allowing more cargo to be hold inside the cargo hold.

7.3.2 Rigging

This section focuses on the rigging of different Nile boats. The rigging of the vessels during the 19th century was more or less the same configuration. The resources used in section are the different writings of travellers and photographs of Nile boats. The most famous views of Nile boats are described by Carson (1909, p.142) "*The sail-boat of the Nile is unique; in the distance, its crossed lateen sails resemble a swallow resting for a moment on the water with wings spread ready for flight. Nothing more picturesque can be imagined than a fleet of these gliding away before one.*" These beautiful scenes of the boats caught the professional photographers' eyes; thus, Nile boats with their lateen sails sailing on the calm Nile waters are the best source of information to be used in this section (Figure 158; Figure 157).

Some writers and photographers managed to capture the dynamics of sailing, furling, and hoisting of sails. The majority of early photographs of the 19th century were staged; examples of this appeared on photographs by Antonio Beato (1880-1891), Francis Frith (1871-1872), Jebbie and Willard Fiske (1880), Frank Mason Good (1860 – 1869) and many more, all managed to photograph the crew of Nile boats, especially the Dahabiyas while climbing on top of the yards of

²² Frank Hurley's collection of photographs are currently housed at the Rare Books Library of the American University in Cairo.

these boats in order to hoist the sails. During the 19th century, most of the lateen sails on the Nile were loose-footed sails, which required more work by boatmen on the mast and yard (Figure 159).

Following Nile boats on different photographs, especially during the turn of the 20th century, some modifications were made to Nile sailboats. Photos by the famous Australian war photographer Frank Hurley showed in detail the emergence of booms on Nile sailboats, especially the *Qyassas*, and specifically on the aft sail/mizzen, which is known in Arabic as “mazzan”. In the majority of the photographs during that period, all foresails, AKA “trinkeit,” were loose-footed, and all the mizzens were attached to booms. This had to do with the ability to manoeuvre the boats and the use of two sails easily.

The qyassas come in three rigs, single masted, double masted, and three masted, depending on its size. In the single masted qyassa, the mainsail normally is foresail. However, some photographs shows the mainsail mast located amidship (Figure 160). The double masted qyassas are the most common ones, with a huge foresail and a smaller mizen (Figure 161). The biggest rig of the three masted qyassa, with mainsail, foresail and a mizen (Figure 162).

The fore mast racking forward a little, and the mizen-mast just before the aft-deck. The foresail is set on a very long yard. The yards normally are of two or three pieces lashed together with skin and ropes. The sail is attached to the yard with rings and ropes (Figure 163).

The mast is fixed into position with a mast step which is located on the keel. The masts normally have a kind of tenon in order to fit not the mast step. The mast is made of one piece of wood, and the yard is fixed on top of the mast with a wire (Figure 164). The top of the mast carries a vertical piece of wood also covered with animal skin, this piece is pierced with one or two holes so that the halyard passes through to secure the yard in place. The yards on Nile boats were fixed. The Mast is held in place by a series of side stays, a forestay, and a backstay (Colin, 1920a, pp. 63–64; Moore, 1970, pp. 116–117).

The standing rigging is consisted of a number of wires that are fixed to the sides of the boat at the gunwale. When a sail is unbent it is made up into a bundle and hung half-way up the mast. One of the masts nearly always has a bundle of some kind hanging to it. All qyassas have a bowsprit. Which is always leaning on the portside of the bow and wedged with a small piece of wood. The foot of the bowsprit rests on a notch on a block (Figure 165). The bowsprit is not only used to fix the tackle holding the lower yardarm, but also it carries the anchor and its chain (Colin, 1920, pp. 64 – 66).

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The mizen is similar cut to the foresail. The mizen mast sometimes shorter or the same length of the mainmast. The mizen sometimes is sheeted to the rudder, other times a spar is fixed where the sheets of the mizen is attached (Colin, 1920, p. 66; Moore, 1970, p. 117). Between the fore and mizen masts, a small mast without a yard or sail might be found, it is where the crew normally keep their fresh bread and belongings away from the rats.

7.3.3 Evolution of rigging

During the first decade of the 20th century, photographs of the qyassas revealed a change in the configuration of rigging on almost all of the Nile boats. The spar attached to the stern of the boats, which was intended to secure the ropes of the mizen sail, was replaced with a boom. The mizen sail was no longer a loose-footed lateen sail. Some of the boats featured it in a settee configuration, with a small luff, while others maintained the sail sheet in a triangular form shape.

It looks from the photographs, that each boatman had his own signature for rigging the mizen sail. In almost all of the photographs, the boatmen on the Nile dependent heavily on the small mizen sail to manoeuvre through the locks and bridges. Moore (1970, p. 118) describe this view *“Some of their practices seem strange, running with only a mizen set for instance, or even two vessels will be seen lashed together running under the mizen of one of them.”*

The use of some innovative ways to sail boats on the Nile. The introduction of sheerlegs on qyassas of different sizes appeared on photographs during the 20th century, especially since 1940s onward, or during the WWII. It is due to the expansion of public works, especially bridges being built across the Nile water in different cities. The use of sheerlegs and cranes was to ensure the safety of the massive yards of Nile boats while sailing beneath bridges. The boatmen had to crane up the mast and yard, racking them forward in order to be able to pass the new bridges that no longer have navigational openings. The sheer legs then is used as a bipod-mast, similar to what the ancient Egyptians used to during the 3rd millennium BC, to carry a small foresail helping the boat to navigate through the bridge (Figure 166; Figure 167; Figure 168; Figure 169).

The sheerlegs then were substituted with a manual iron winch with pullies and gears, in order to be able to raise the huge mast and yard while crossing under low bridges. This feature continued until modern day qyassas. By 1970s, all qyassas carried settee sail with boom, on both the foresail and mizen sail. No major changes on the rigging were noticed after that time, and this configuration of rigging remains the same to-date.

7.4 Remarks and Discussion

In conclusion, this chapter summarises the changes in boatbuilding materials and rigging that were introduced into Nile boatbuilding traditions. The effects of the British invasion of Egypt in 1882 and the subsequent military actions in the country necessitated a new kind of boat, as well as modifications to the existing Nile flotilla to keep pace with international changes and the demands of the 19th century travel.

During the early 19th century, the British, both the army and the explorers, used native boats as the only method available for conveying troops and tourists through the Nile. However, once Egypt was globalized and fully opened to Westerners, with Khedive Ismail's attempts to build a more modern version of Egypt, a demand for better and bigger modes of transportation in the Nile was needed.

There were three distinctive categories of Nile boats found on the Nile during the 19th and early 20th centuries. The cargo boats serviced both national and international mobility of goods and people across Egypt, connecting the country between the Mediterranean and the Red Sea, as well as maintaining the south-north flow of Egyptian goods along the Nile. These types of boats, as old as the country itself, have witnessed a number of changes brought about by the environment, traditions, or new technologies. The working boats of the Nile underwent a dramatic change in terms of hull shape, material, and rigging during the 19th century.

The second category that is still in use today is leisure boats. They began as mere cargo vessels with space for a few travellers to join the trip, evolving into a distinctive category of houseboats, exclusively used for transporting explorers and later tourists. This type has also evolved due to new technologies, global trends, and the changing tastes of international travellers. Consequently, this has created a new breed of boats and boatmen, who have inherited their boatbuilding and navigation traditions from their families and blended them with the new modes of travel dictated by global tourism business.

The third category of boats that somehow affected the previous categories was troop boats. The introduction of new methods of using the same leisure and cargo boats as auxiliary or floating field hospitals had a temporary effect on the other categories of boats. The utilisation of indigenous boats for combat typically ended with the destruction of these vessels or their return to their original roles once combat was no longer necessary.

However, the emergence of new boat models that were exclusively used by foreign troops in Egypt had an indirect impact on boatbuilding and sailing traditions along the Nile. The introduction of whalers to convey troops up the Nile, along with the later addition of leisure sailboats for off-duty troops, influenced how Egyptian boatbuilders and sailors perceived their own crafts. The changes in rigging and the introduction of new sailing techniques, such as the drop keel, may have arisen from the need to employ less manpower boats.

7.5 Chapter Seven Figures



Figure 100: Nile gunboats 1896 with qyassas towed as auxiliary. Drawing by William Lionel Wyllie. Credit National Maritime Museum, Greenwich



Figure 99: The 1st Australian Light Horse Brigade is about to cross the Nile. Unknown photographer 1915. Australian War Memorial.



Figure 101: The 1st Australian Light Horse Brigade is about to cross the Nile. Unknown photographer 1915. Australian War Memorial.



Figure 102: Maxim Battery's qyassa tied up at Nasri Island.
Photograph by Francis Gregson 1898.
The Royal Collection Trust.



Figure 103: View of the qyassa with a machine gun. Photograph by Francis Gregson 1898. The Royal Collection Trust.

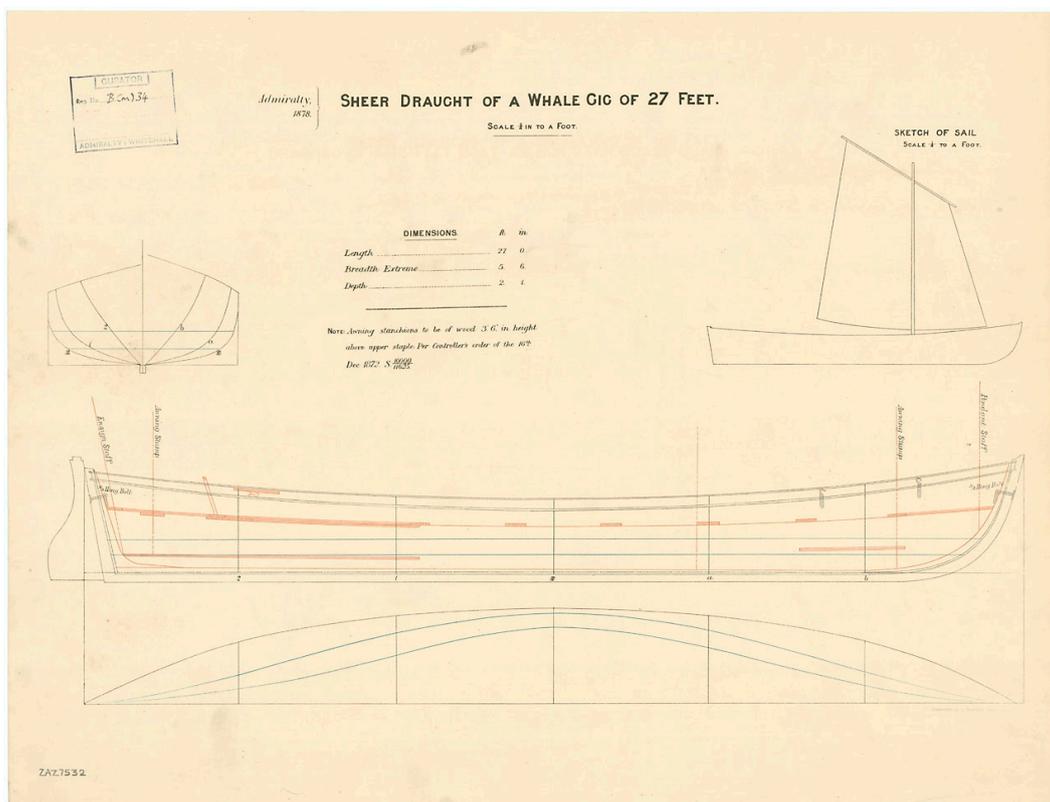


Figure 104: Plans of the 1878 whale gig by the British Admiralty.

APPENDIX C.

BOATS CONSTRUCTED FOR NILE EXPEDITION.

Name and Address of Contractor.	Dimensions of Boats.			Number of Boats Contracted for.	Price per Boat.	Place of Delivery.
	Length.	Beam.	Depth.			
John Elder & Co., Fairfield Works, Govan, Glasgow	30 feet	7 feet	2 ft. 6 in.	20	85 <i>l</i> .	Glasgow
John Read, Junr., Heaving-up Slip, Portsmouth	30 feet	6 ft. 9 in.	2 ft. 6 in.	10	85 <i>l</i> .	Portsmouth Portsmouth (specimen boat)
	30 feet	6 ft. 6 in.	2 ft. 6 in.	1	100 <i>l</i> .	
D. & W. Henderson and Co., 30, Langfield Quay, Glasgow	32 feet	6 ft. 10 in.	2 ft. 8 in.	17	78 <i>l</i> .	Glasgow
	30 feet	6 ft. 6 in.	2 ft. 6 in.	16	74 <i>l</i> .	
Forrest & Son, Norway Yard, Limehouse	30 feet	6 ft. 9 in.	2 ft. 6 in.	17	74 <i>l</i> .	30 Liverpool 70 Woolwich Portsmouth
	32 feet	7 feet	2 ft. 8 in.	100	90 <i>l</i> .	
John White, Medina Dock, Cowes	32 feet	7 feet	2 ft. 8 in.	30	88 <i>l</i> .	
T. W. Woolfe & Son, Shadwell, E.	30 feet	6 ft. 9 in.	2 ft. 6 in.	6	78 <i>l</i> . 15 <i>s</i> .	Woolwich
Watkins & Co., Orchard Yard, Blackwall	30 feet	6 ft. 9 in.	2 ft. 6 in.	20	85 <i>l</i> .	14 Woolwich 6 Portsmouth Portsmouth
Symons & Son, Falmouth	30 feet	6 ft. 9 in.	2 ft. 6 in.	10	70 <i>l</i> .	
M. Robson & Son, North Quay, Monkwearmouth, Sunderland	30 feet	6 ft. 9 in.	2 ft. 6 in.	15	75 <i>l</i> .	Woolwich
F. Hedley, West Hartlepool	30 feet	6 ft. 9 in.	2 ft. 6 in.	4	80 <i>l</i> .	Woolwich
J. E. Scott, 13, Rood Lane, E.C.	30 feet	7 feet	2 ft. 6 in.	25	80 <i>l</i> .	13 Glasgow 12 Woolwich Portsmouth
W. A. Black & Co., Hatcher's Yard, Southampton	30 feet	6 ft. 9 in.	2 ft. 6 in.	5	85 <i>l</i> .	
Waterman, Bros., Cremyll Yard, Devonport	30 feet	6 ft. 9 in.	2 ft. 6 in.	10	74 <i>l</i> . 5 <i>s</i> .	Portsmouth
Earle Shipping and Engineering Co., Hull	32 feet	6 ft. 9 in.	2 ft. 6 in.	20	78 <i>l</i> . 5 <i>s</i> .	Woolwich
F. Pounder, 77, High Street, Hartlepool	32 feet	6 ft. 9 in.	2 ft. 6 in.	4	80 <i>l</i> .	Woolwich
John Preston, 59 and 60, Cornhill, E.C.	32 feet	6 ft. 9 in.	2 ft. 6 in.	35	85 <i>l</i> .	Portsmouth
Cochran & Co., Duke Street, Birkenhead	32 feet	6 ft. 9 in.	2 ft. 6 in.	14	85 <i>l</i> .	Liverpool
J. & G. Thomson, Clyde Bank, Glasgow	32 feet	6 ft. 9 in.	2 ft. 6 in.	10	85 <i>l</i> .	Glasgow
Camper & Nicholson, Gosport	32 feet	6 ft. 9 in.	2 ft. 6 in.	10	88 <i>l</i> .	Portsmouth
Copeman				1		
				400		

The second series of 400 boats, under charge of Colonel Grove, followed closely upon the first series.

Figure 105: List of the whalers built for the Nile expedition. Extracted from Butlar 1887,

Appendix C.



Figure 106: Rare photograph of the whalers on the Nile. Extracted from Benn 2009, page 166.

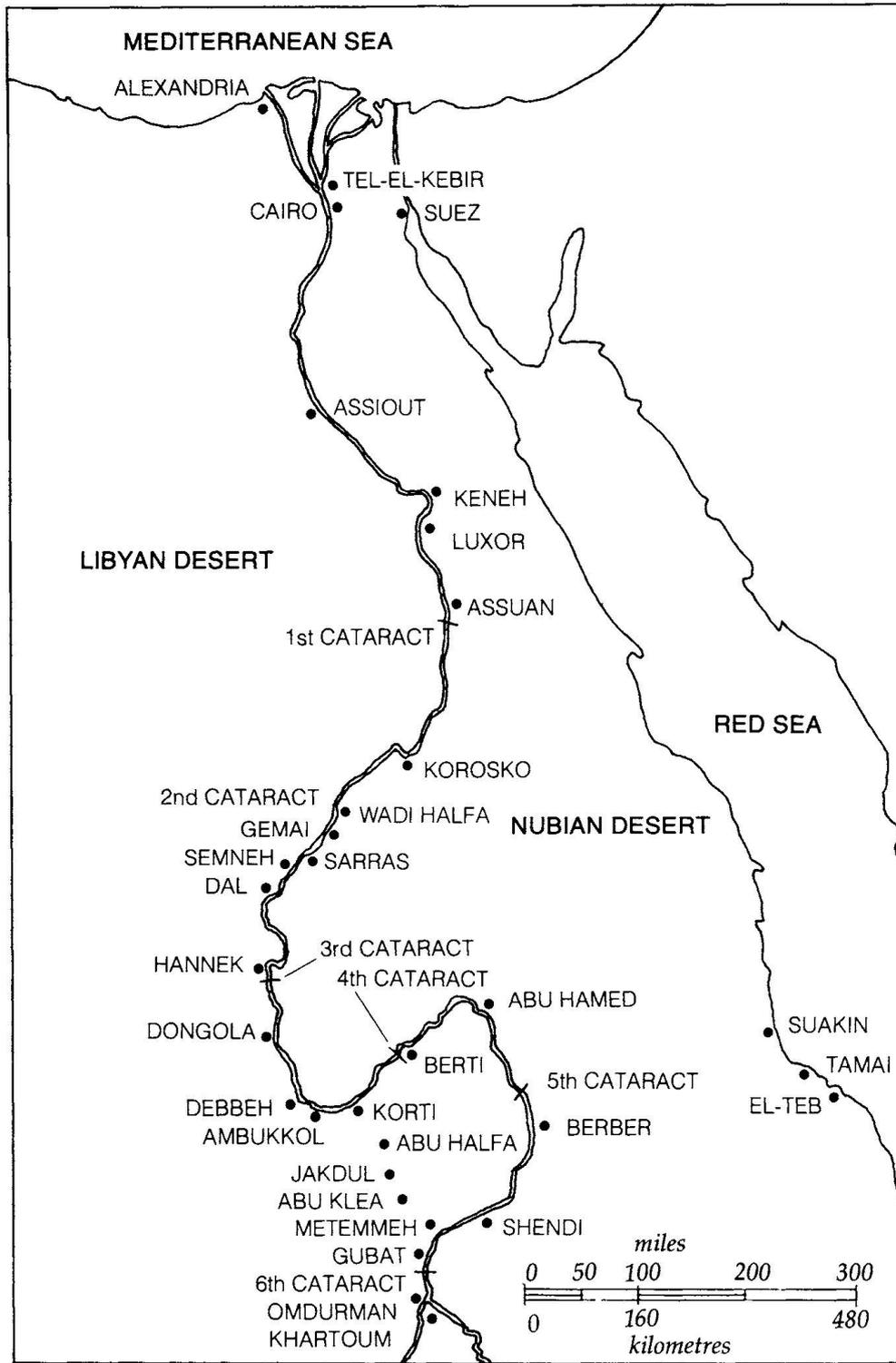


Figure 107: Map of the Nile including the cataracts locations. Modified from MaClaren 1978, page 37.

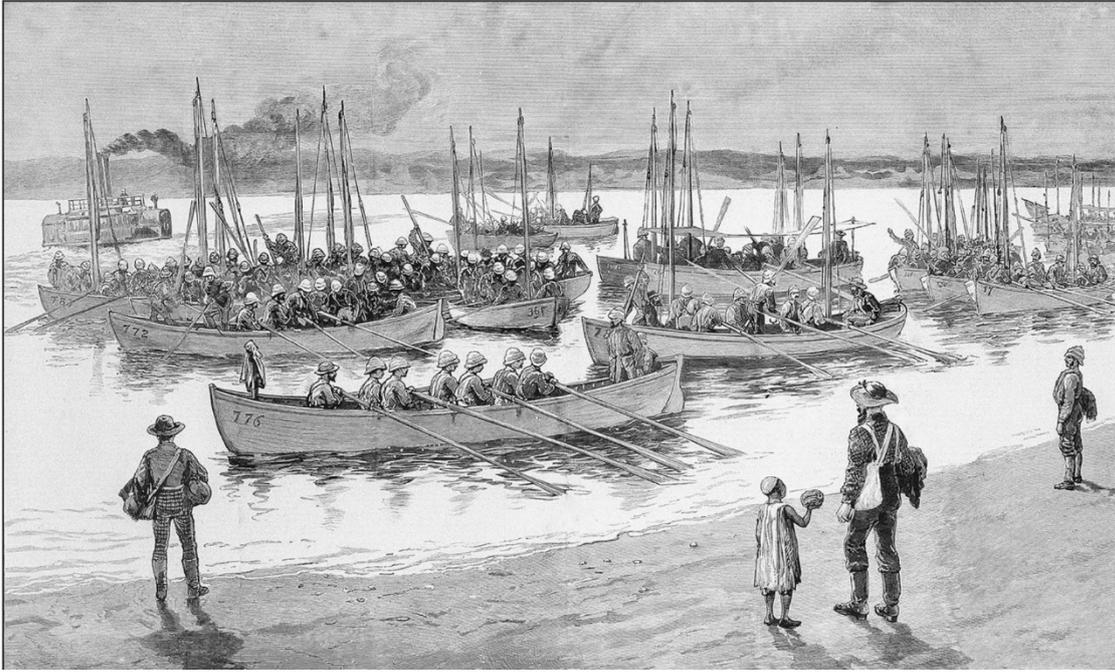


Figure 109: Drawing of the Canadian Voyageurs on the Nile. Modified from MacLaren 1978, page 50.

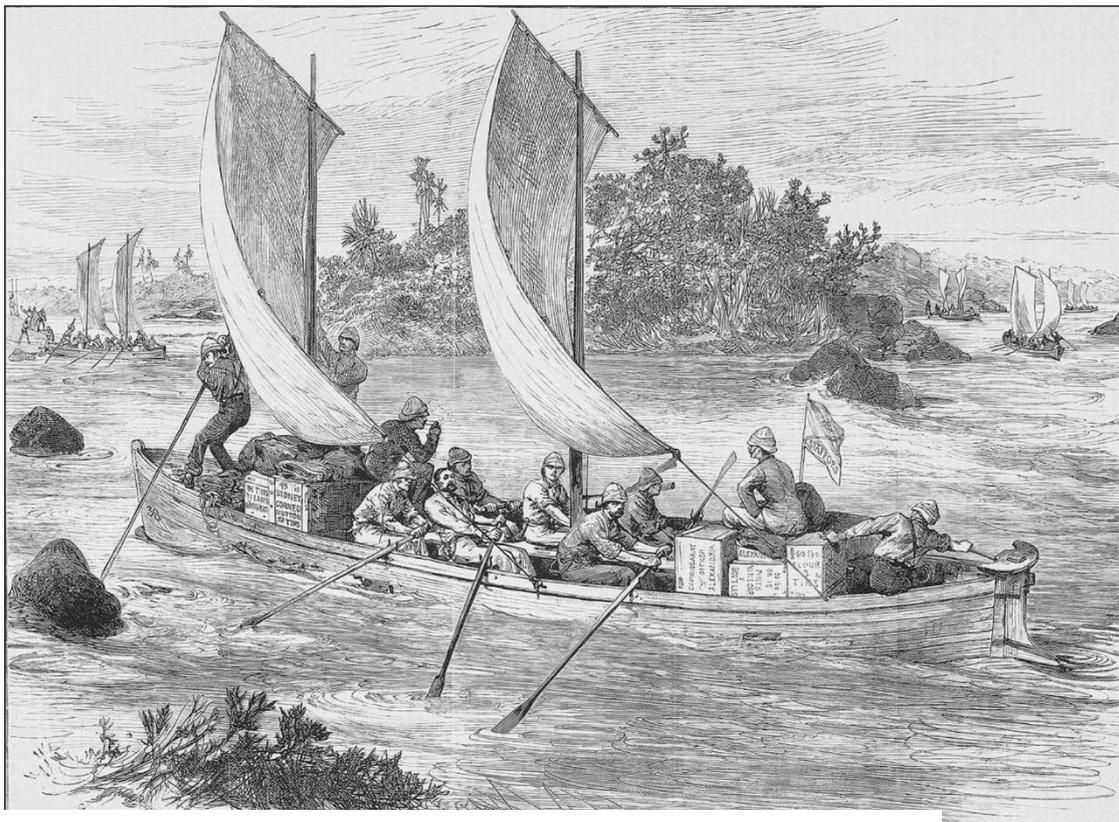


Figure 108: Drawing of the First Battalion of the South Staffordshire Regiment navigating through one of the Cataracts. Canadian voyageurs were manning working the rudder and pole. Modified from MacLaren 1978, page 59.

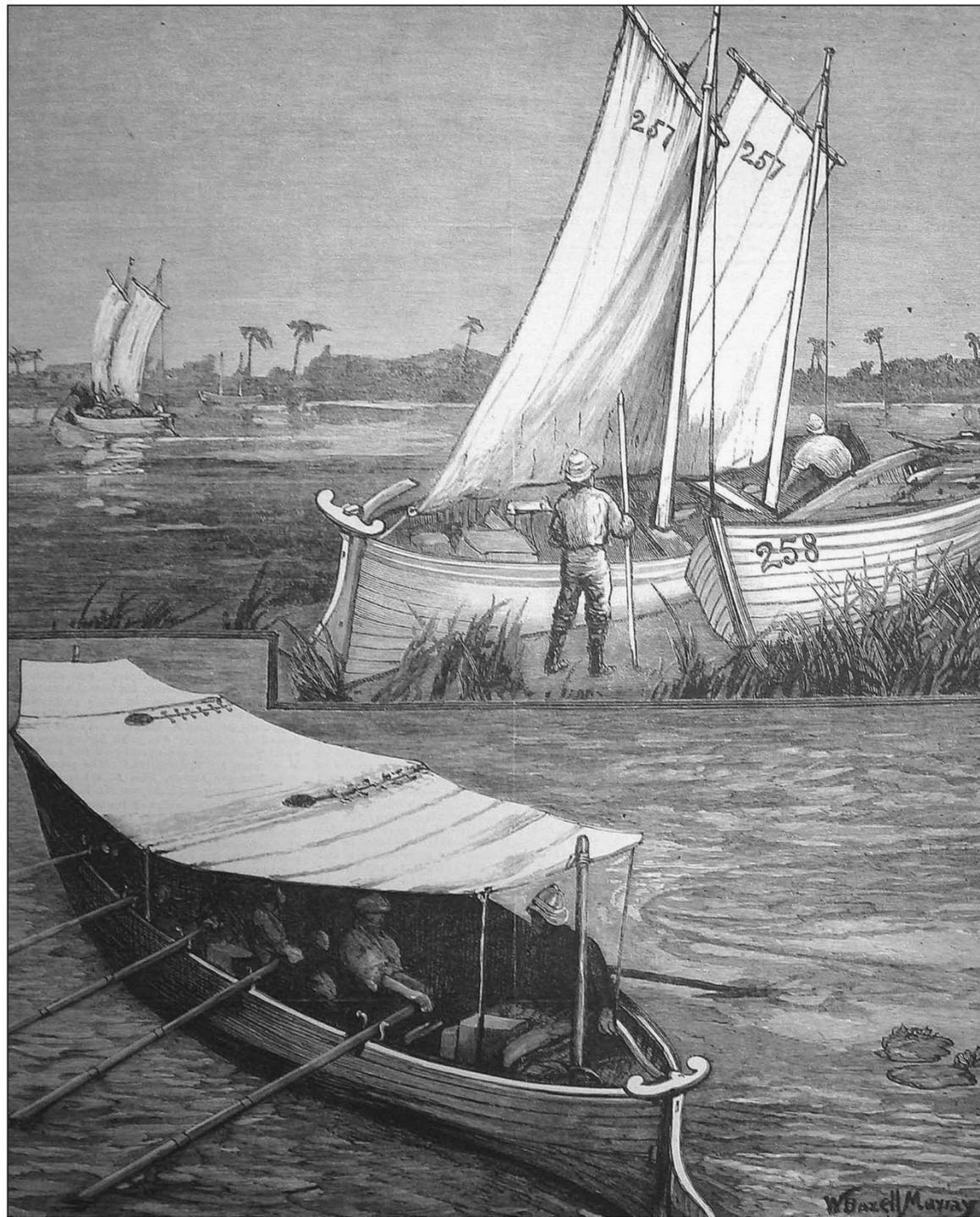


Figure 110: Drawing of the Nile Whalers with sailing and awning configurations. Modified from MaLaren 1978, page 144.



Figure 112: Photograph of a canja next to a British camp in Sudan. The photograph was attached to a communication written in Arabic from Sir H. E. Wood to members of the 'Ababdah and Bishariyin tribes regarding the mission of Lieutenant H. M. L. Rundle. The photograph is dated 1884; Cook and his son might have hired a similar boat. Extracted from the Sir Reginald Wingate papers at the Durham University Archive.

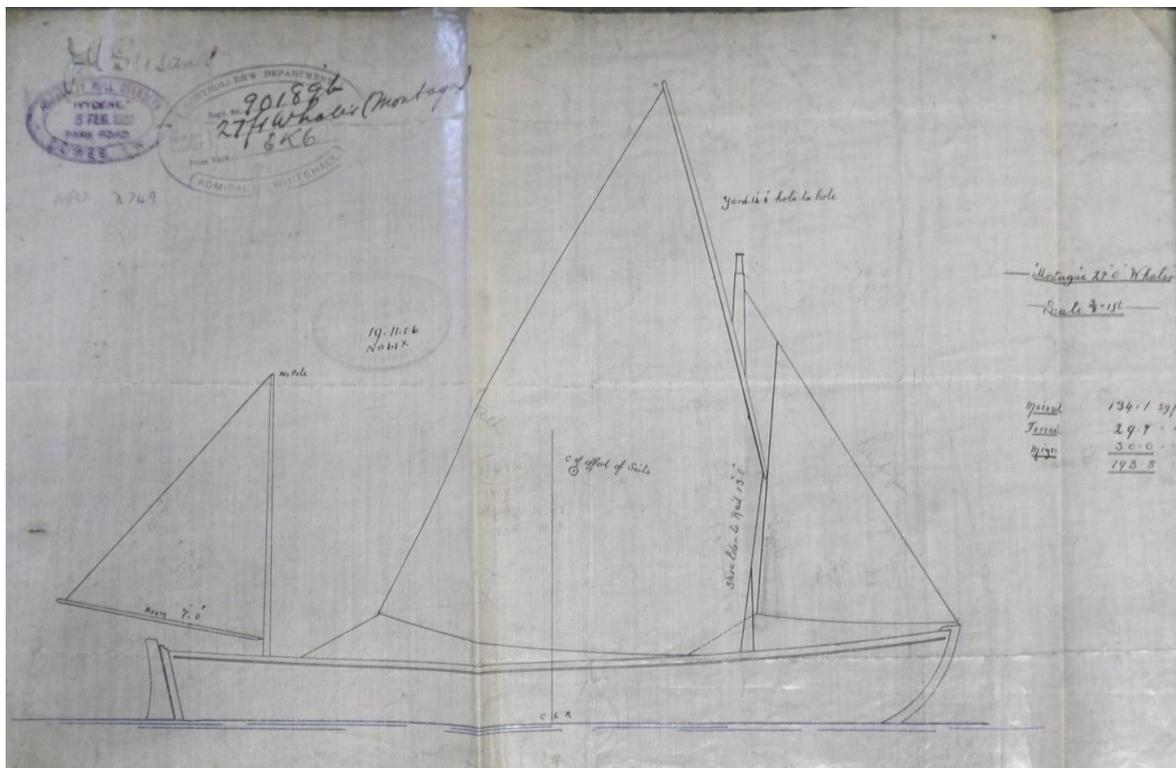


Figure 111: Plan of the Montagu Whaler 1907. National Maritime Museum, Greenwich.

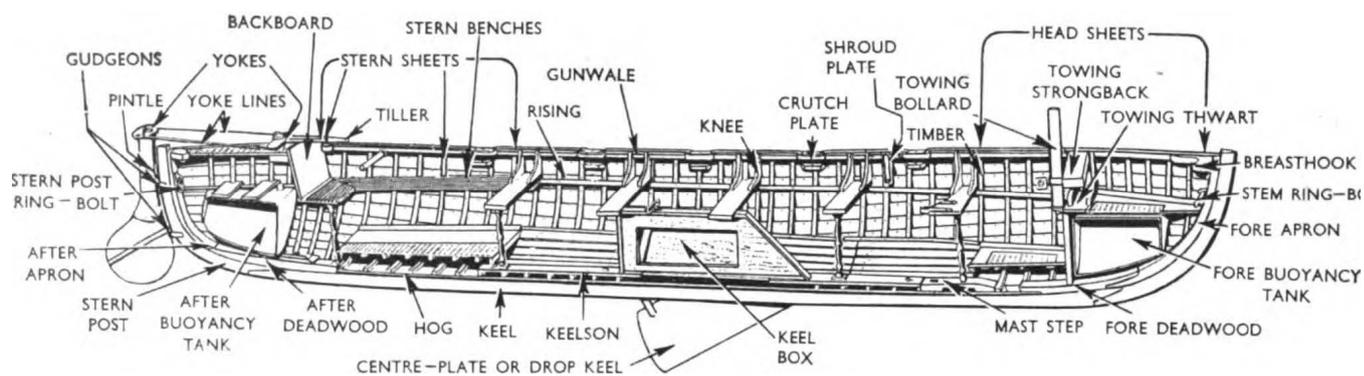


Figure 114: Sideview plan of the Admiralty Montagu Whaler. Modified from Admiralty 1965, page 122.

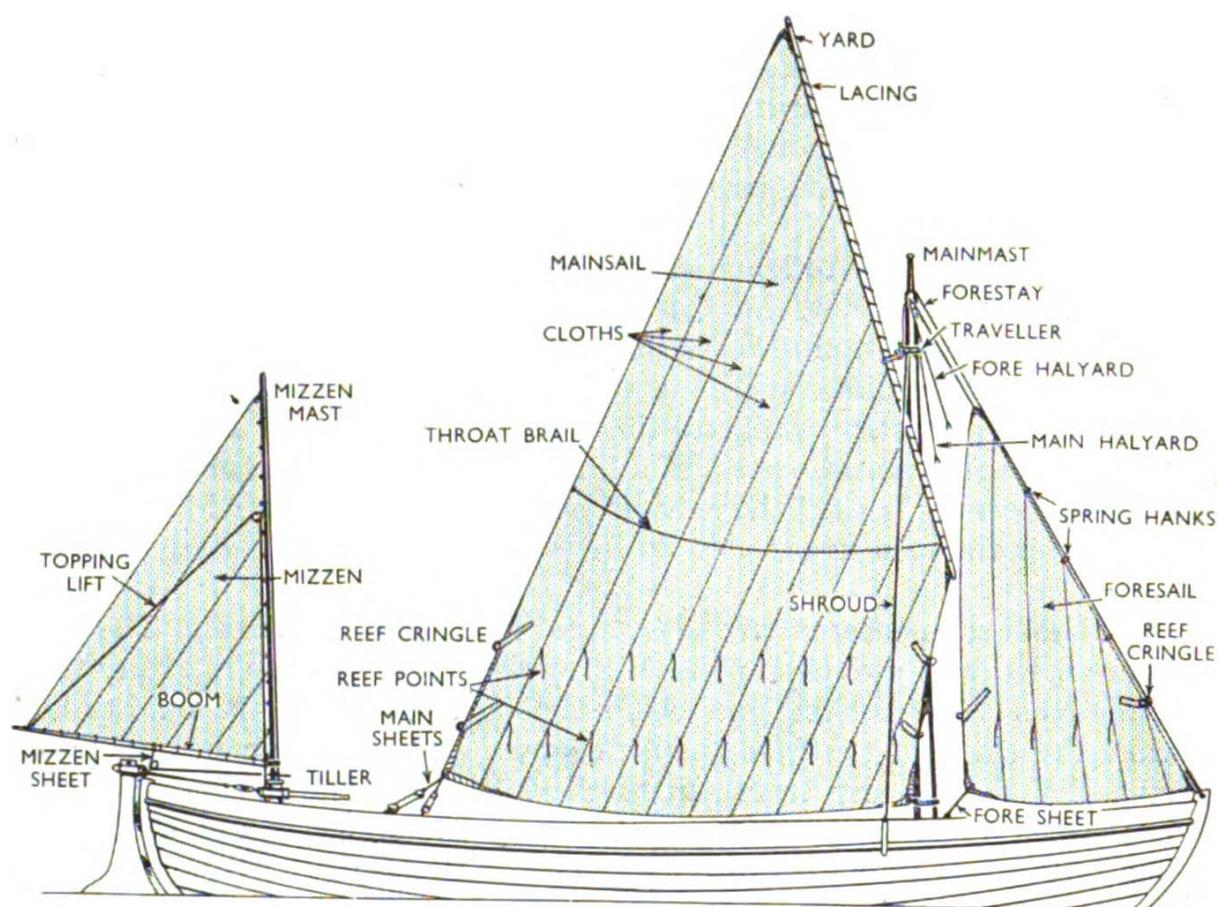


Figure 113: Sideview plan of the Admiralty Montagu Whaler full rigging. Modified from Admiralty 1951, page 272.



Figure 116: Admiralty Whalers built and moored at the Thomas Cook & Son boatyard in Bulaq, Cairo. Thomas Cook Archives.



Figure 115: Admiralty Whalers built and moored at the Thomas Cook & Son boatyard in Bulaq, Cairo. Thomas Cook Archives.



Figure 117: Egyptian boatmen inside the TC&S boatyard building Admiralty dinghies. Thomas Cook Archives.



Figure 118: Egyptian boatmen working on the frames of the Fairmile Launch at the TC&S boatyard. Thomas Cook Archive



Figure 119: Cropped section of the previous image showing that the Egyptian boatmen wrote Bism Allah, Ma sha' Allah on the bow of Fairmile launch. Thomas Cook Archives.



Figure 121: Preparing the frames of Fairmile launches at TC&S boatyard in Bulaq. Thomas Cook Archives.

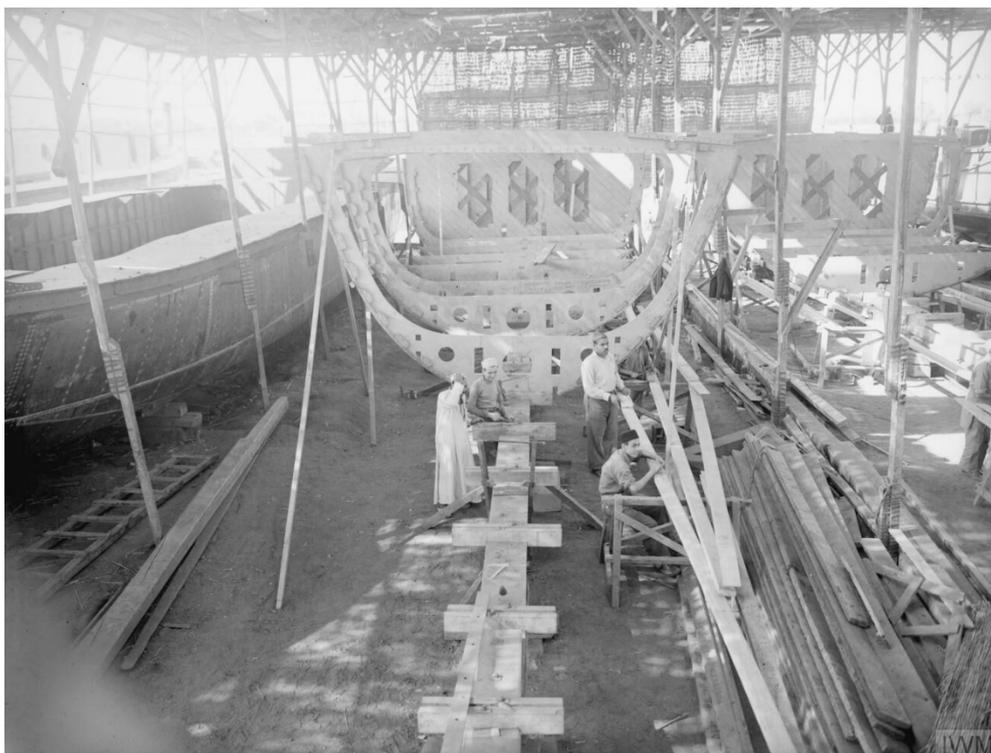


Figure 120: Preparing the frames of Fairmile launches at AA boatyard in Shubra. Imperial War Museum.



Figure 123: The outer planking of Fairmile launch at TC&S boatyard in Bulaq. Thomas Cook Archives.



Figure 122: The outer planking of Fairmile launch at AA boatyard in Shubra. Imperial War Museum.

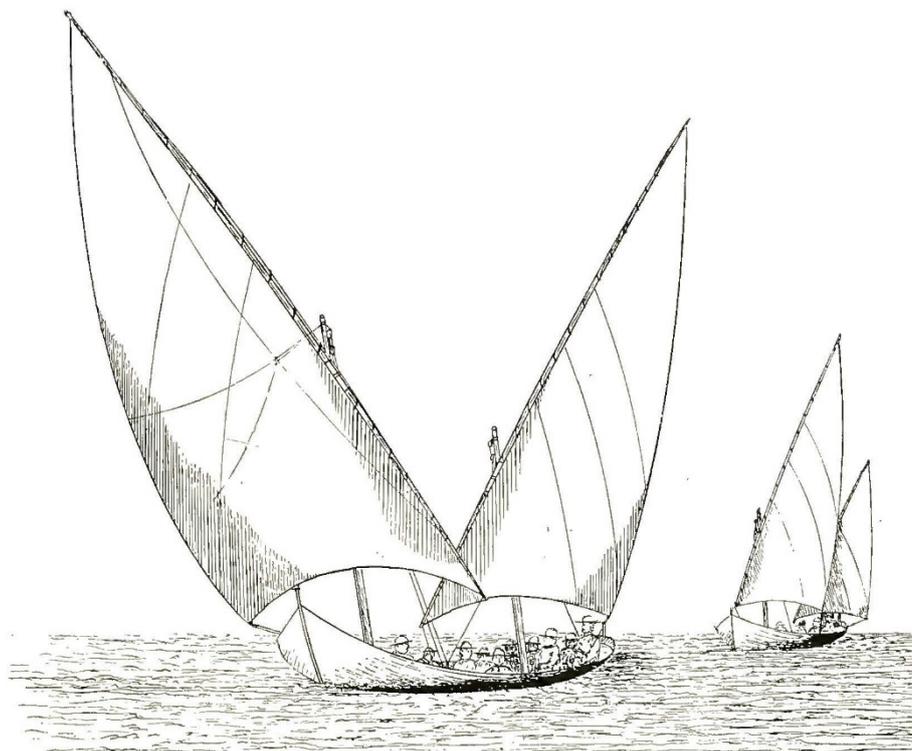


Figure 125: Mediteranean Felucca rig. Extracted from Drawing by Henry Folkard 1901, page 403.

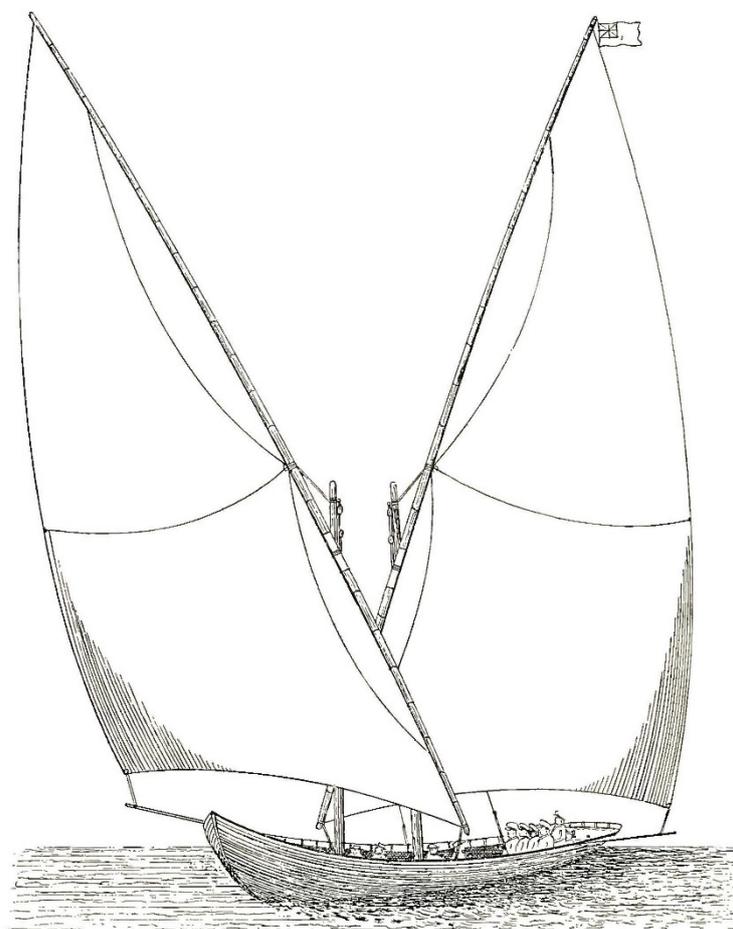


Figure 124: Goose-winged Felucca rig drawing by Folkard 1901, page 62.



Figure 127: Photograph of Felucca Type A at Philae. Photograph by Zangaki Brothers 1865. University of Chicago Archive.

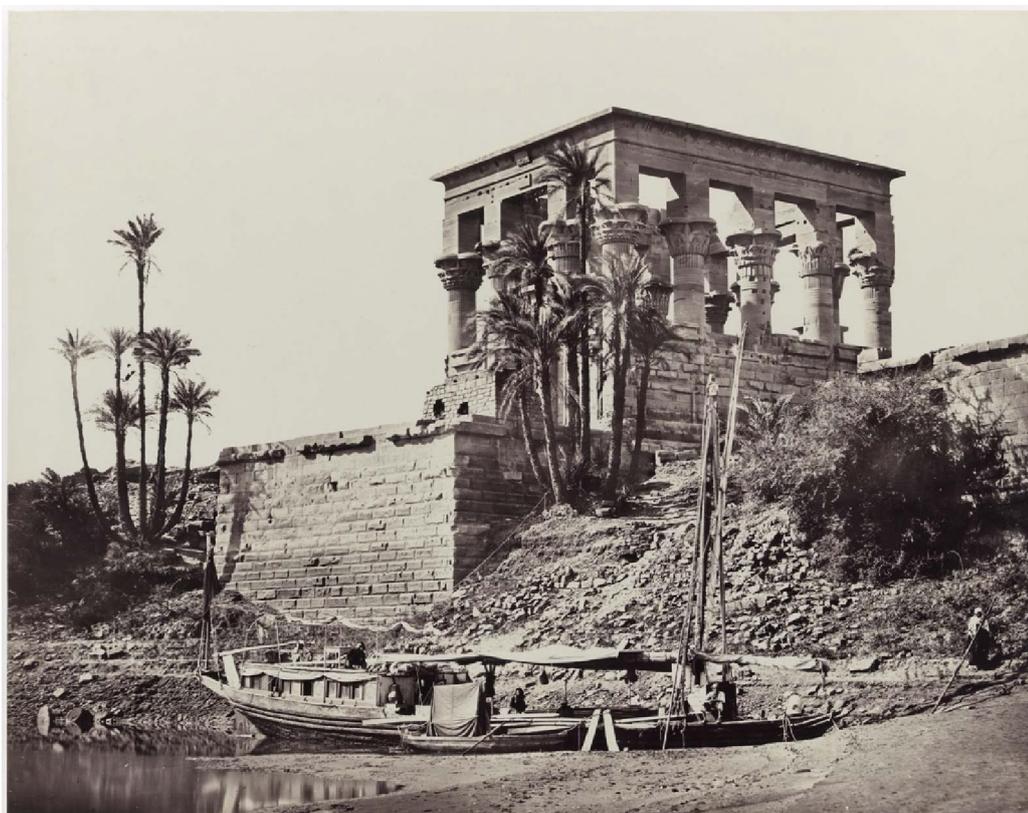


Figure 126: Canja in front of the Hypaethral Temple, Philae. Photograph by Francis Frith 1857. Fine Arts Museum, Boston.

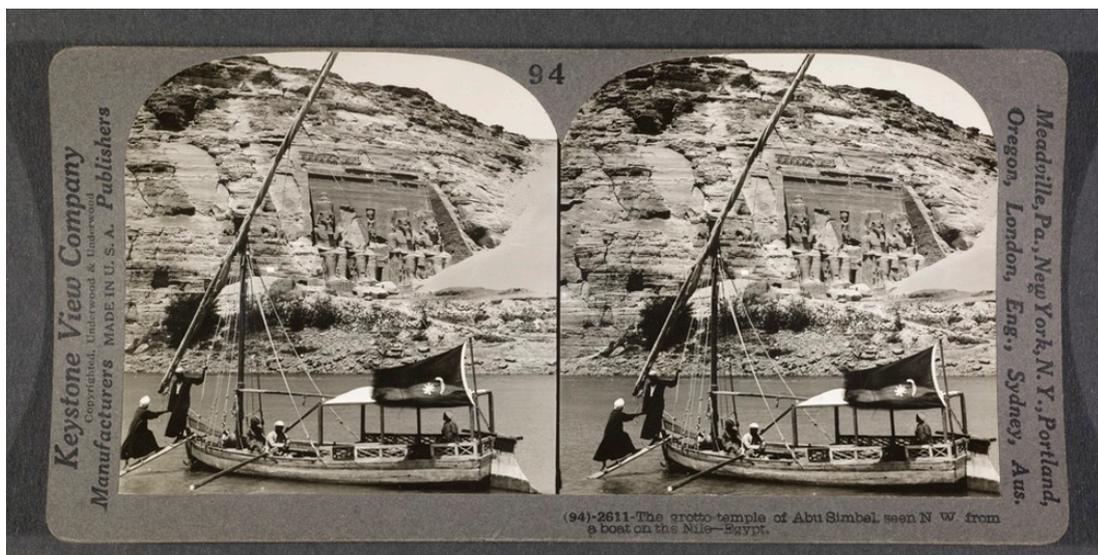


Figure 128: Felucca Type A at Abu Simbel temple. Stereoscopic photograph by Underwood and Underwood. The Getty Research institute.

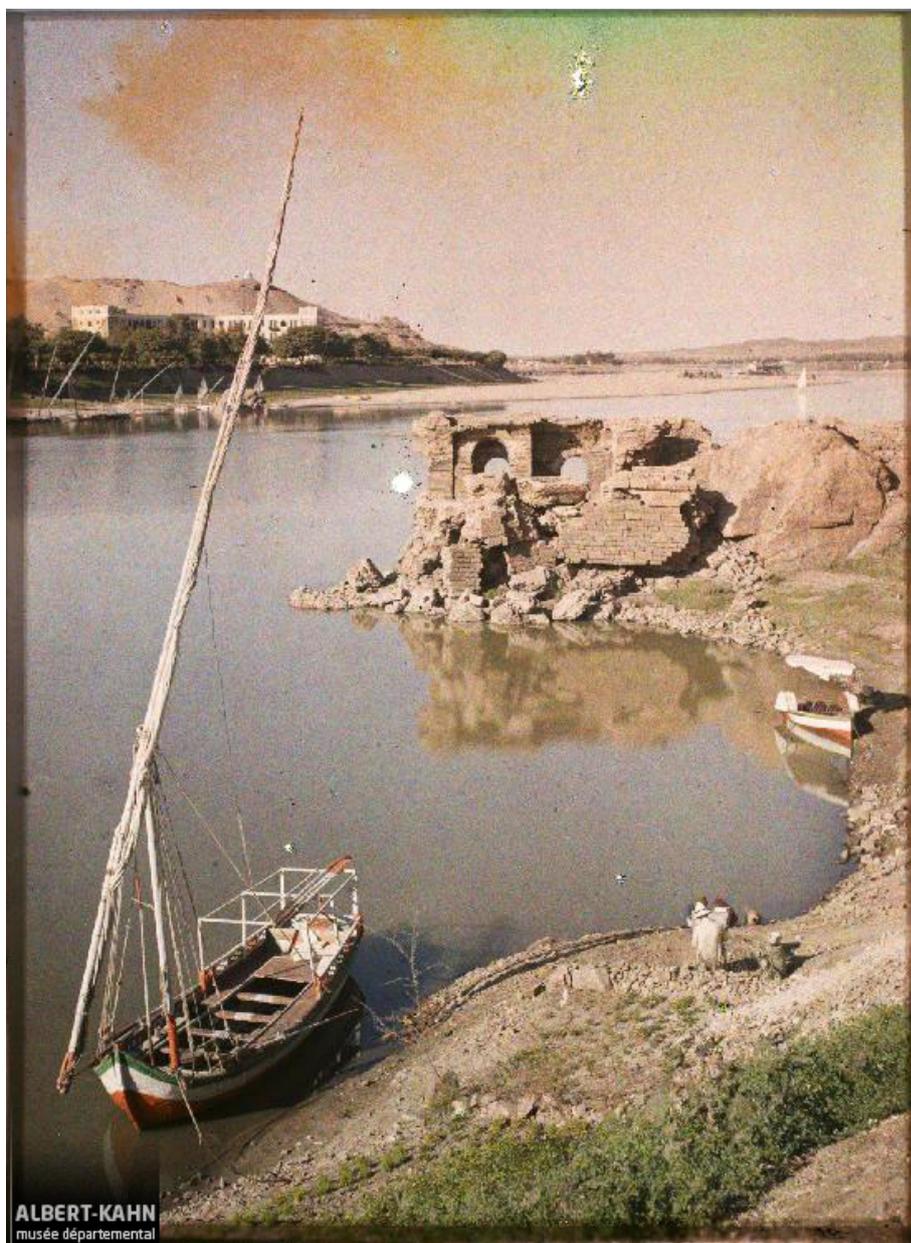


Figure 129: Autochrome photograph of Felucca taken by Auguste Léon 1914. The Albert Kahn Archive.



Figure 130: Inside the Felucca, The crew rowing the boat. Photograph by Leon and Levy 1900.



Figure 131: General view of the felucca being rowed. Photograph by Leon and Levy
1900.

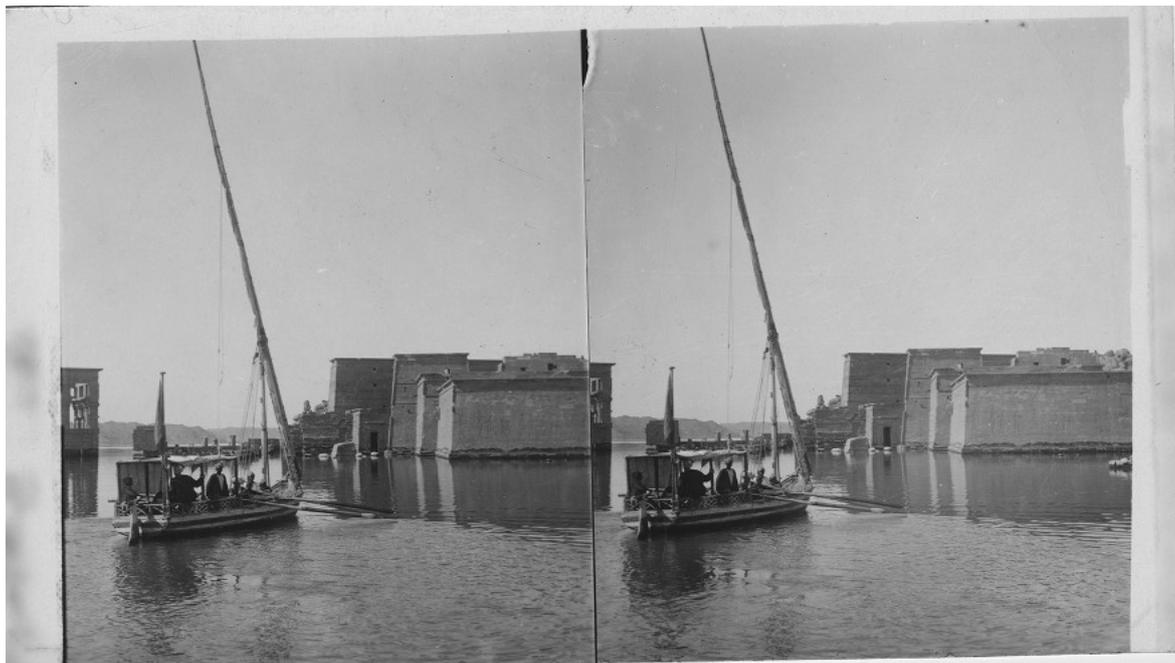


Figure 133: Stereoscopic photograph of Felucca exploring the Philae pylon during the inundation. Photograph by Gifford M. Mast, unknown date. Keystone-Mast Collection, UCR/California Museum of Photography, University of California at Riverside.



Figure 132: Exploring Philae during the inundation. Photograph by Marcel Vandal 1928.

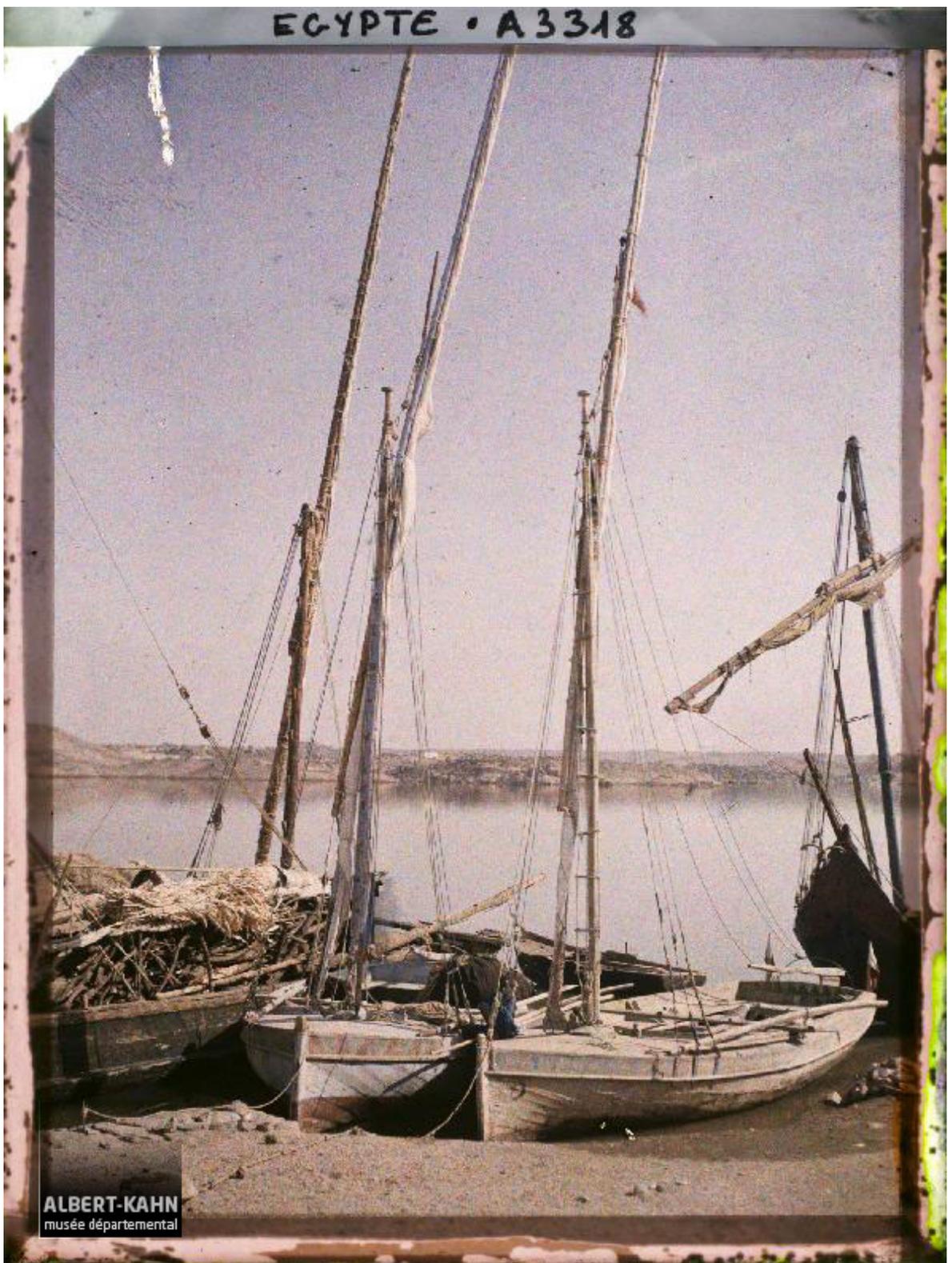


Figure 134: The earliest photograph of the Felucca Type B. Photograph by Auguste Léon 1914. The Albert Kahn Archive.



Figure 135: Settee rigged felucca in Aswan. Photograph by James Burke 1960. LIFE Magazine.



Figure 136: Settee rigged felucca in Aswan. Photograph by James Burke 1960. LIFE Magazine.

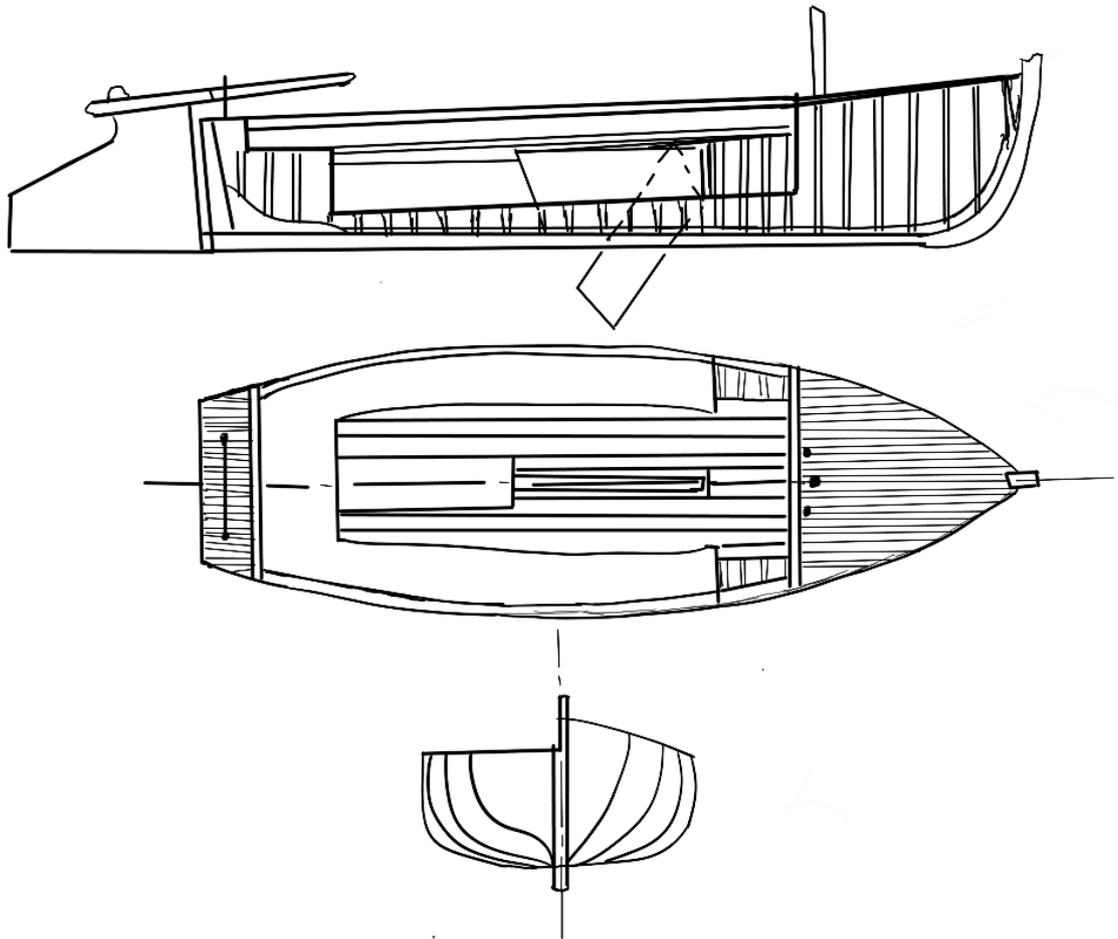


Figure 137: Line drawing of the modified felucca. Drawing by Mai Ghanem.



Figure 138: Felucca on the bank of the Nile in Aswan. Photograph by the researcher 2017.



Figure 139: Nubian Kids playing around an abandoned wooden Felucca.



Figure 140: Freshly painted iron felucca at the boatyard in Aswan. Photograph by the researcher 2017.



Figure 142: Felucca sailing on the Nile in Aswan. Photograph by the Researcher 2017.

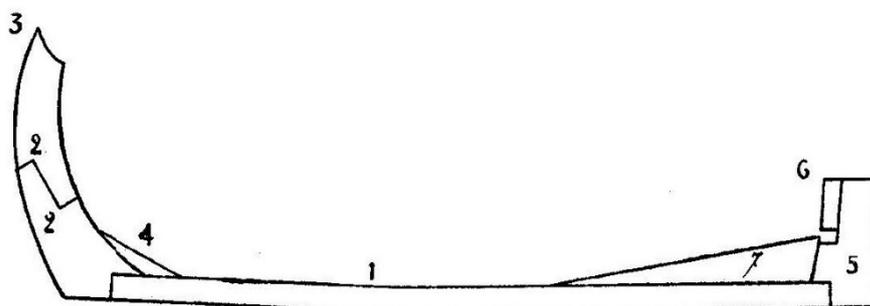


Fig. 1. — Schéma de la quille avec l'étrave et l'étambot.

- | | | |
|--------------------|----------------------|-----------------------------|
| 1. <i>etrābel.</i> | 4. <i>buṭāna.</i> | 6. <i>walad.</i> |
| 2. <i>badan.</i> | 5. <i>waṣṭaniya.</i> | 7. <i>naqrafōs ed-dell.</i> |
| 3. <i>šabūra.</i> | | |

Figure 141: Keel parts of a qyassa. Drawing by Colin 1920, page 54.

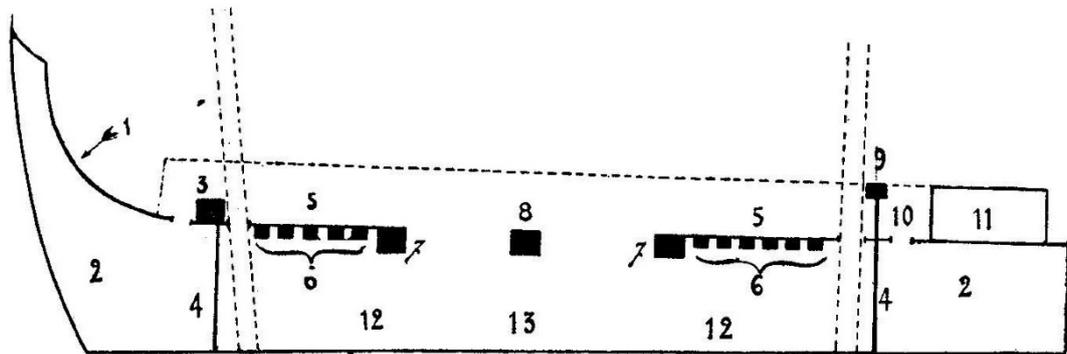


Fig. 4. — Coupe longitudinale d'une barque à deux mâts.

- | | | |
|-----------------------|---------------------------------|-------------------|
| 1. <i>şadr, sedr.</i> | 6. <i>dawaqīs, sing. daqūs.</i> | 10. <i>naqsa.</i> |
| 2. <i>ħenn, ħonn.</i> | 7. <i>şend.</i> | 11. <i>īārma.</i> |
| 3. <i>ğesr.</i> | 8. <i>ğayūs.</i> | 12. <i>rahīn.</i> |
| 4. <i>şüb.</i> | 9. <i>ğayūs el-mazzān.</i> | 13. <i>kōra.</i> |
| 5. <i>boṭūnsa.</i> | | |

Figure 143: Sideview plan of qyassa. Drawing by Colin 1920, page 59.



Figure 144: Typical boatyard laden with different qyassas. Photograph by Auguste Léon 1914. The Albert Kahn Archive.



Figure 145: Qyassa being planked at a boatyard in Kasr El Nil in Cairo. Emile Burdet 1893.



Figure 146: Boatbuilders use a framesaw to prepare timber. This view is one of the most photographed views of any boatyard.



Figure 147: Rudder blade of a qyassa, the rudder measures 3 meters by 4 meters. Photograph by the Researcher 2017.



Figure 148: Two qyassa being built on the bank of the Nile next to Luxor Temple. Photograph by Pascal Sébah, unknown date.



Figure 149: Post card of a qyassa being built in a boatyard, with a view of the bulwark.



Figure 150: Iron qyassa near Cairo. Photograph by the Author 2015.



Figure 152: Wooden qyassa in a boatyard in Cairo. Photograph by Richard B Parker 1965/1967. AUC Archives.



Figure 151: Iron qyassa in a boatyard in Cairo. Photograph by Richard B Parker 1965/1967. AUC Archives.



Figure 153: Qyassa with the riveted hull in Cairo. Photograph by Eugene Harris 1961. University of Wisconsin-Milwaukee Libraries.



Figure 154: Qyassas crossing the open bridge near Zamalik in Cairo. Photograph by Frank Hurley 1934.



Figure 155: Iron and wooden qyassa moored side by side on the bank of the Nile. Photograph by Eugene Harris 1961. University of Wisconsin-Milwaukee Libraries.



Figure 156: Iron and wooden qyassa moored side by side on the bank of the Nile.

Photograph by Eugene Harris 1961. University of Wisconsin-Milwaukee Libraries.



Figure 158: Qyassas on the Nile in Cairo. Photograph by Frank Hurley 1934.



Figure 157: Qyassas on the Nile in Cairo. Photograph by Frank Hurley 1934.



Figure 159: Boatmen climbing on the yard to hoist the sail. Francis Frith 1860s. Victoria and Albert Museum.



Figure 160: Qyassas with one mainsail. Photograph by Auguste Léon 1914. The Albert Kahn Archive.



Figure 161: Double masted qassas on the Nile in Cairo. Photograph by Facchinelli 1890s. French National Library.



Figure 162: Three masted qyassa on the Nile. Photograph by Leon and Levy. Europeana Archive.

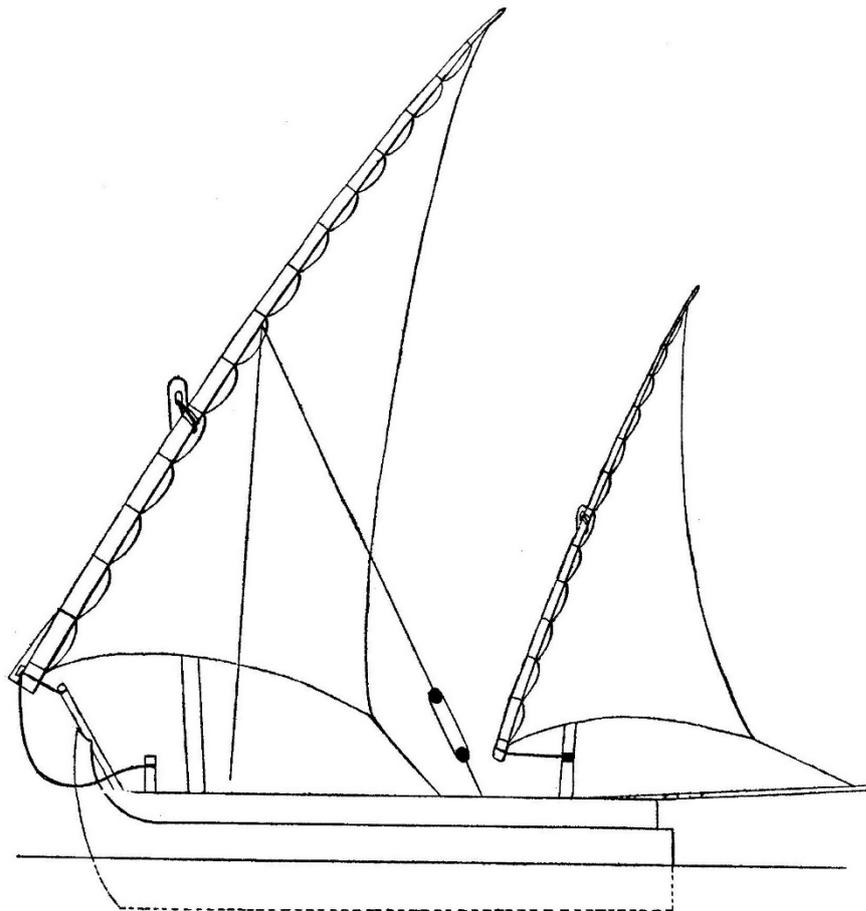


Figure 164: The typical qyassa rig. Drawing by Colin 1920, page 67.

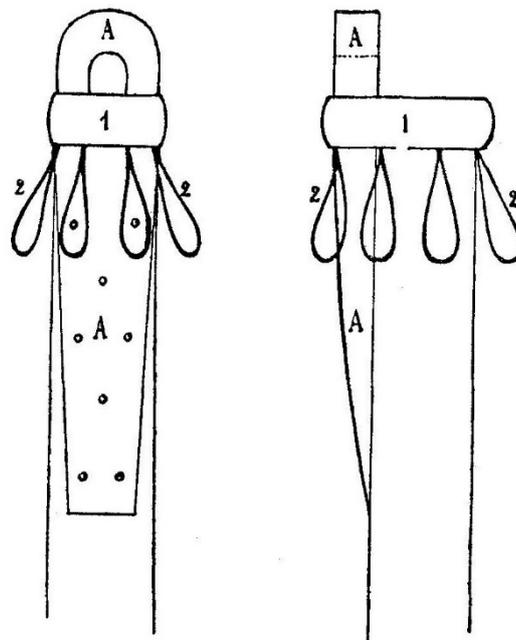


Fig. 5. — Schéma du sommet du mât (face et profil) avec le *ḡamūr*.

- A. *ḡamūr*.
- 1. *tarḡida*; *bardaia*.
- 2. *rawāḡi* (sing. *rāḡa*) ou *sebaḥ* (sing. *sepha*).

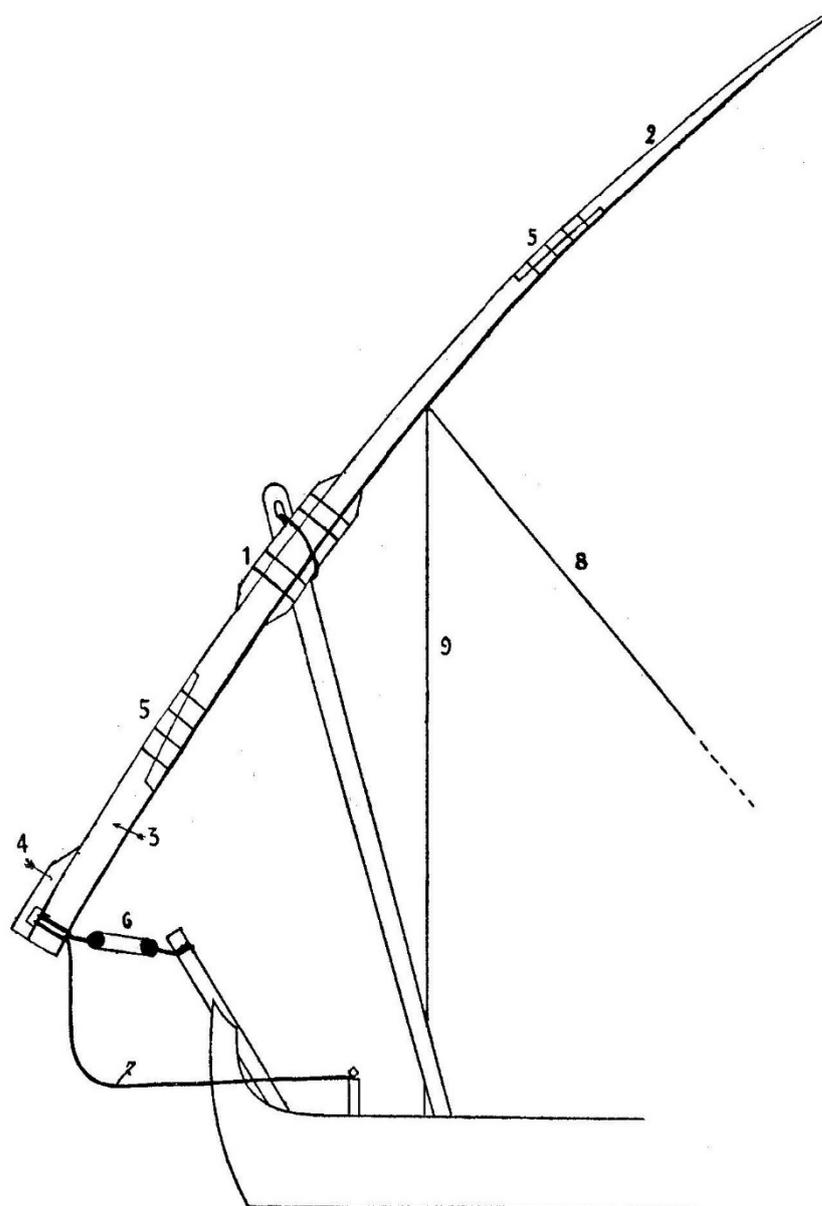


Fig. 6. — Schéma de l'antenne avec ses cordages.

- | | | |
|--------------------|------------------------|----------------------|
| 1. <i>taṭbiqa.</i> | 4. <i>baḡf, ḍabba.</i> | 7. <i>meḡaddema.</i> |
| 2. <i>qūdem.</i> | 5. <i>ṣambar.</i> | 8. <i>maṣṣin.</i> |
| 3. <i>muḡdem.</i> | 6. <i>māṭa.</i> | 9. <i>meltewi.</i> |

Figure 165: Mainsail rig on qyassa. Drawing by Colin 1920, page 65.



Figure 166: Using of sheerlegs to lower the sail. Harrison Forman 1961.



Figure 167: Using of sheerlegs to lower the sail. Harrison Forman 1961.



Figure 168: Qyassas with shearlegs on the bow. Photograph by Frank Hurley 1934.



Figure 169: Qyassas with shearlegs on the bow. Photograph by Frank Hurley 1934.

Chapter 8 The decline and fall of Wooden Nile boats during the second half of the 20th century

8.1 Introduction

This chapter concludes the research about Nile boats, and the reason behind its decline. As mentioned during the previous chapters, Nile boats and Nile navigation were affected by various factors. These influential factors include traditions, local trends, local commerce, international commerce, and new technical advancements. As discussed previously in Chapter 6 and 7, the technological advancements of using steam engines and iron hull boats did not find its way into the traditional Nile sailing boats except during the early decades of the 19th century.

8.2 Inland Water Transportation

As discussed in Chapter 6, Mohamed Ali approved the Cairo Suez land road, but did not approve the establishment of the railways in Egypt. The Pasha worked hard, during his years as the governor of Egypt, to control the Nile navigation, and to insure a steady flow of cargo through the Nile and Alexandria and into the Mediterranean and Europe. Pre-1840, the Pasha normally would either seize the Nile boats, build his own boats, or hire the local boatmen to transport his cargo and products into the Harbour in Alexandria (Nūrī, 2017). However, after 1840, the Pasha focused more on reforming Nile navigation and the relationship between boat owners, boatmen, and the government.

Other than the taxes that these boats were subject to, in accordance with its size and cargo, a type of boat registration system was invented. Each boat had a copper plate attached to it, that included the number of the boat, and its tonnage. The boats that were not registered were not allowed through the water locks on the Al-Maḥmūdīyah Canal. These regulations also included a periodical inspection on the Nile boats, and requiring of repairs at the arsenal in Alexandria, to be paid by the boat owner or the captain. In 1846, a law was decreed by the Pasha to protect boatmen and their families. Furthermore, the law included the minimum number of boatmen that are hired on each boat, in accordance with its tonnage, the maximum was 18 boatmen on the boats with 1600 ardeb/ 320 tons, and 3 for the boats of less than 50 ardeb/10 tons (Nūrī, 2017, pp. 134–139). Under the reign of Mohamed Ali, the total number of sailboats that were registered on the Nile was 3200, divided between Governmental and private owned boats (‘ilm al-Dīn, 1989, p. 14).

During the reign of Ismail, and despite the expansion of the railways system in Egypt, Nile boats flourished, and now that a new navigational canal was dug between Cairo and the Bitter Lakes, it allowed navigation of Nile boats in the lakes and across the Suez Canal (Figure 170; Figure 171) In 1872, Nile cargo sailboats were 9563 (‘ilm al-Dīn, 1989, p. 17). It was not until 1890 that the Nile Navigation law was decreed.

Under the British administration, Nile sailing boats did not obtain the same attention that railways and steamers got. Most of the facilitations were given to the railways. However, that did not affect the numbers of the locally owned sailboats during the first decade of the 20th century (‘ilm al-Dīn, 1989, pp. 18–20).

Thus, the Inland Water Transport Commission substituted the previous Inland Navigation Department that was established in 1919. Previously the Mechanical Department of the Ministry of Public Works was the division responsible for the registration of all river crafts under the 1917 law. The department was called the Registration of Boats Service in 1933, and its purpose was to issue licenses for boats, launches and steamers (Maşlahat al-Misāḥah, 1933, pp. 367–368) (Figure 172).

As discussed previously in chapter 4, starting 1952, Egypt became a Republic. This meant the end of an era. The republic has new agenda, including very big agendas related to economy reforms, trade and Nile related public works. Special attention was given to Inland Water Transport (IWT), when in 1958, the new Egyptian government under President Gamal Abdelnasser established the Inland Water Transport Commission (IWTC), under the Ministry of Communications. All means of land and water transportation inside the Republic are supervised by the Ministry of Communications.

The IWTC registered 10,309 Nile boats, both sailing boats, steamboats, and diesel engine barges. Total amount of cargo carried on the Nile in 1959/60 was 4 million tons per year, consisting of 90% of the total bulk transported in the country (The Ministry of Communications, 1960, pp. 89–90). During the 1950s the Egyptian government encouraged private capital to develop the national economy. However, since 1962, the first steps towards the nationalisation of the country and especially the transportation sector started. Until that date, the IWT was privately owned and ran by 28 companies, with capacity of over 100,000 tons, and about 25,000 boatmen were engaged with the transportation system (The Ministry of Communications, 1960, p. 96).

A 10-year plan to improve the Inland Water ways was commissioned by the Egyptian government (1954 – 1964). The improvements included the following (Ministry of Communications, 1960, p. 96):

Chapter 8

- Improvement the course of the Nile between Cairo and Aswan.
- Developing of a new Cairo-Alexandria waterway.
- Digging of a navigable channel through Mariout Lake.
- Modification and widening of the Ismailia canal.
- Digging of new navigable canals both in the Delta and upper Egypt.
- Construction of iron ore transportation river fleet.
- Construction of fertilizer transportation and other river fleet.
- Establishing 54 landing places and facilities to load and unload of Nile barges.
- Renovating the mechanics of locks and bridges.

One of the key aspects here is the construction of a new and dedicated river fleet to transport iron ore. The project targeted to carry 700,000 tons of iron ore from the ore fields around Aswan to the newly established steel mill in Helwan, about 930 km away. The steel mill complex in Helwan was inaugurated in 1954 with the help of East Germany, a total number of 4 high-capacity furnaces were built.

Abdelnasser wanted a local flotilla to convey the ore to the mills. However, the traditional qyassas of the Nile, with its infamous unreliability sticking on schedule deterred him from investing into these boats like what Mohamed Ali did. Instead, he ordered the National Arab shipyards to design and build a new river fleet in just 18 months (Ministry of Communications, 1960, p. 96). The Nasser fleet was operated by 162 operators, with total capacity of 350,000 tons of ore per year. This fleet consisted of twin-ship units in a combination of one pusher barge and one dumb barge. The pusher barge and pushed dumb barges – Twin Unit type is about 50 m in length, 7.5 m in width, with a 400 Hp diesel engine. The capacity of twin-ship barge unit was between 650-850 tons, with a draft of 1.4 to 1.8 when fully laden. It requires 5 boatmen for the pusher unit and 2 boatmen for the dumb barge (Figure 173).

8.3 Nile Navigation in the Republic

The Egyptian Inland Water Transportation network totals 2,635 km, including 936 km within the Delta region, and 1,696 km of Nile Valley all the way to the Sudanese boarder at Wadi Halfa. Egypt has one of the most developed inland water transport systems on the African continent through the Nile River. As mentioned previously in Chapter 4, substantial efforts by the consecutive Governmental Administrations were exerted in order to maintain the highest navigational capability possible throughout the river Nile. Since the construction of the Delta Barrages in 1867, all barrages were equipped with navigational locks, allowing continuous and virtually uninterrupted navigation between Aswan and the Mediterranean, as well as to the Red Sea (The World Bank, 2008, p. 36; Johnstone and Ratanavaraha, 2017, p. 155).

After the declaration of the Republic of Egypt in February 1953, a series of laws were decreed to organize the Internal Water Transportation of the country. The first law decreed was No 10 for the year 1956 gave the power of managing the IWT to the Internal Water Transportation Commission, under the framework of the Ministry of Public Works. In 1958, the Republic of Egypt was decreed the United Arab Republic, thus Law No 367 for the year 1959 decreed that the IWTC would be its own entity under the title The General Authority for Inland Water Transport Affairs in Egypt. Finally, the last decree about IWT by Nasser was in 1970, establishing The Egyptian General Corporation for River Transportation, which became under jurisdiction of the Ministry of Transport.

By 1970, the IWT network was divided into a number of categories based on the navigability of each part. Navigable waterways classified as 1st, 2nd, and 3rd classes, which require specified vertical clearance, fairway width, maximum draft, and minimum water depth. The 1st class network has width of 35 m, minimum water depth of 2.5 m, 13 m of air clearance, allowing maximum draft of 1.8 m. The 1st class network includes 980 kilometres between Cairo and Aswan, 205 kilometres between Cairo and Alexandria as well as 241 kilometres between Cairo and Damietta. These three waterways feature 3 locks and 24 bridges, 7 locks and 27 bridges, as well as 3 locks and 16 bridges, respectively (Mostafa *et al*, 2022, p. 2). The 2nd class network has width of 12 m, with 1.8 m of water depth, 3.5 m of air clearance, and allows boats with maximum draft of 1.5 m. The 3rd class has width of 8 m, water depth of 1.25 m, air clearance of 2.5 m, and allows maximum draft of 1.0 m (The World Bank, 2008, p. 36; Mohammed Mostafa *et al.*, 2022, p. 2).

In 1976, the Egyptian government under President Anwar Al Sadat decided to approach the transportation system differently, allowing private sector to invest into the local economy once again. A number of cooperative and companies were established to invest and operate internal

transportation in Egypt. The establishment of Public Authority for Roads and Navigation meant allowed the expansion of road development rather than the reliance on Nile transportation. Five public sector companies and three private sector companies were working on developing the roads and highways in Egypt, while the Nile navigation had only two public sector companies working.

As part of the privatisation of the Egyptian economy in the 1990s, holding companies were created to take over state companies. The Holding company for Inland and River Transport took over all state sector transport companies. While the Egyptian road network was booming, the Nile Navigational waterways were declining. By 1993, 73.1% of the total bulk cargo was transported using roads, 22.2% used railways, and only 4.7% was transported via IWT (Gray, 1998, p. 35).

Year	Cargo Volume (1000 tons)				Modal Share (%)			
	Road	Railway	IWT	Total	Road	Railway	IWT	Total
1979	73,700	5,000	4,300	83,000	88.7	6.1	5.2	100
1992	165,495	9,642 0	3,214	178,351	92.8	5.4	1.8	100
2000	242,000	11,812	2,161 0	256,000	94.5	4.6	0.8	100
2010	433,361	4,042	2,226	439,630	98.6	0.9	0.5	100

Table 1: Annual Modal Share for Egyptian Freight Movement, Source: JICA, 2014.

According to the latest statistics of goods and passengers transport in river transport sector (CAPMS, 2022) of the statistical year 2019, total number of river transportation units 1,466 unit. Including sailboats, Nile cruises, and barges. Carrying a total of 16.7 million tons, which is less than 1% of the total freight services.

El-Nakib, Roberts and Colquhoun (2009) researched the challenges facing the IWT sector in Egypt. Logistics of inland waterways of Egypt has unique characteristics and abilities to be utilised properly and efficiently. However, there are numerous reasons for establishing proper logistics system in Egypt which therefore hinder the development of the inland waterways transport sector. Shenouda et al. (2018) list 4 main reasons behind the failing of IWT sector in Egypt, including:

1. The interaction of responsibilities between a number of ministries including ministry of transport and ministry of irrigation.
2. Both the vessels and Nile transport facilities have been neglected and are lacking the proper equipment to maintain transportation activity 24/7.

3. Since the building of Aswan High Dam, the water levels vary, especially during the Winter Sud. Many vessels are not able to navigate safely during the whole year.
4. Transport companies preferring land transportation due to reliability.

(The World Bank 2018: 36) argues that *“there is a significant potential for river freight transport. One barge on inland waterways can carry about 1200 tons of cargo, which would require 45-70 trucks to carry. A ton can be transported 550 km by barge on 5 litres of fuel as opposed to 100km by truck. Yet, the current share of cargo transport in Egypt by Nile River transport is only 0.6 percent.”*

8.4 The last Sailors on the Nile

The title of this section is inspired from Neil Hollander and Harald Mertes' book "The last sailors: the final days of working sail" (Hollander and Mertes, 1984), one of two books published in 1984, along with a documentary about their search for the last sailors around the world from 1981 to 1983. Hollander and Mertes chose 8 working sail from around the world, one of them was what they called "The Egyptian aiyassa."

The two explorers managed to get themselves a place on one of the last sailing qyassas on the Nile from Cairo to Upper Egypt. Issa, the owner of a number of qyassas on the Nile that work in transportation of hay between middle Egypt and Cairo allowed the two to join a boat man and his son on their trip up the river. The authors gave detailed account of the scene in Cairo, they did not include which port exactly they embarked from. However, comparing their account with other photographs and videos of the 1980s put then on the Giza landing place on the western bank of the Nile (Figure 174).

Hollander and Mertes (1984) includes a large number of detailed photographs of the shape of the boats, their rigging, and their crew. The description also included the hardships that Nile boatmen had to endure during that period of time, when Nile transportation is no longer the main method of cargo delivery. They encapsulated the status quo of Nile sailing boats and their boatmen. The boats which are owned by a merchant, or a boat owner were employed in transporting the traditional cargos of the Nile, including hay, pottery, limestone, sand and fodder. This is reflected also on the photographs included in the book, as well as the photographs in this research archive (Figure 175). Issa, the boat owner talks about the monthly payment of his boatmen which was 114\$, and that the majority of workers and boatmen fled the country in search of better working conditions in the Gulf countries (Hollander and Mertes, 1984, p. 55).

During their interaction, the authors and Issa talk about the wooden qyassas being dismantled, their wood would then be repurposed, and eventually it would be sold as scab wood, turned into coal and ends up melting asphalt for new roads. This statement cannot be truer, as mentioned in the previous section, IWT declined in favour of road transportation. The masts, yards, and sails of the wooden qyassas would be repurposed, and they can be used again on other boats. Iron hulled qyassa also were being repaired and modified on the river. From the photographs and the description of the authors, one can see exactly the status of decline and disrepair of the Nile sailing boats.

"Those aiyassas never really die. They cut them apart and use the plates to build new ones" (Hollander and Metes, 1984, p. 55). Some boatmen and boat owners who wanted to be part of

the government sanctioned cargo barges, they would sell their qyassas, either wooden or iron, then they use the money to co-opt into a new diesel-powered barge, which is known by the boatmen as sandals. Those sandals were the one introduced by Nasser's scheme in the 1960s.

While examining the photographs of Nile boats during the 1980s and 1990s, the majority of qyassas that appear on the photographs are iron hull qyassas. (Hollander and Metes 1984: 69) argues that not only the motorboats are replacing the sails, but also the traditional local cargoes that those qyassas used to transport were no longer needed. There are less donkeys and horses in Cairo to feed them fodder and hay, as donkey cars are declining in number. Aluminium pots are taking over clay, and since the opening of the Aswan High Dam, clay and brick industries are running out of silt.

During the researcher MA research (Morsy, 2016) a handful of qyassas were still being used to bring small amount of cargo of hay to Cairo, especially the Island of Dahab and Warraq. These last few boats were all owned by a wealthy trader from a small town 20 km south of Helwan called El Ayat. The boatmen of El Masanda, which is the small village where these last qyassas anchor, they still use them for transporting of small amount of cargo. The boatmen no longer work during the whole year, and thus they do other work during their time on land.

During the 2017 fieldwork, a number of qyassas were spotted in upper Egypt. The boats were all being modified into cabin boats. As Nile boatmen no longer earn their living from transporting of goods on the Nile, they decided that modifying their working boats into cabin boats that can be used during the tourist high season was a good idea.

Currently the modified qyassas are known as sandals, or cabin sandals. These once working force of the Nile are furnished with two or three air-conditioned cabins, along with a toilet a kitchen and a terrace that would allow tourists enjoy sailing the Nile, less than half of the price of hiring a dahabiyah (Figure 176).

8.5 Remarks, Discussion, conclusion, and Future work

To answer the main research question; What killed the Nile boats? this thesis explored a number of aspects that were thought to have direct effect on the change and decline of Nile transportation, boatbuilding traditions and sailing. Throughout the journey to answer the question, a number of aspects were studied in detail.

As there was a big gap in our knowledge and understanding of the Nile sailing during the last 3 centuries, a basic historical and geographical foundation needed to be laid. Understanding of the unique geography and history of Egypt had helped determining a number of factors that directly and indirectly affected the Nile boats. Navigation on the Nile was always portrayed as this very easy type of navigation. Sailing up the river with the predominant wind and drifting down the Nile with the current. However, the reality was different. Nile boatmen since antiquity had to endure hardships of sailing the Nile. The meandering of the Nile made the boats using sails under the mercy of wind, and subject to capsizing, especially in Upper Egypt.

The Nile boatmen adopted these lofty and huge lateen sails that, for the untrained eye, are very clumsy they managed to work perfectly under the Nile navigation conditions, where they are needed. Lateen sails with long yards allowed Egyptian boatmen to catch the wind with the upper third of the sail, reaching above the big banks of the Nile, these sails were the main drive fore of the Nile boats. Boating on the Nile as a leisure activity was not without cost, thus reflecting the large number of boatmen that were employed on the Nile sailing boat. Nile boatmen had to sail, row, track, and punt their boats for a very long stretches of the river.

Despite that the Nile did not have natural navigational barriers on its course until the first cataract in Aswan, the Nile had some hidden barriers. These hidden barriers were the everchanging riverbed. Due to the change in water velocity and the inundation, submerged mud islands are created on the navigational route of the Nile. These small mud islands which are not visible on the surface, were one of the many obstacles in Nile navigation. Despite that the Egyptian boatmen were masters of the Nile, the historical and travelling accounts always mentions the continuous possibility of grounding the Nile boats on these submerged islands.

Nile boatmen had to adapt both their sailing techniques and vessels to work in this everchanging environment. They had to adapt to the continuous changing of the sailing condition. From the studies of the nature of the Nile, every inundation season was different. Again, most writers said that the Nile was one of the most predictable rivers in the world. However, this is not the case. Of course accumulative human knowledge allowed Egyptians to understand the Nile river water cycle. However, it is not possible to predict the count of water discharged on the Nile due to the

inundation every year, and it is even harder to predict the changes that would occur to the navigational channel of the river.

The choice of focusing only on the main river valley in this research was because the other regions of the Nile like the delta required different approach. This also reflects on the type and number of boats sailing in those regions. The delta is a very dynamic region, with more unstable navigational canals. Discussion about the Al-Maḥmūdīyah canal and the changes that were introduced to it is one of the examples about this case. Currently, the al-Maḥmūdīyah canal lost its navigation ability and no longer have any types of boats on it.

The river Nile allowed both ancient and modern civilisation to prosper. Egypt is the biggest country on the Nile with population concentration on the Nile valley and delta. That reflected on the large number and types of boats that were used on the Nile during its history. To focus more on the typology, the researcher had to narrow the historical contexts of the research to a confined period of time. Starting with the French invasion, who despite having a full record of life in both modern and ancient Egypt, were not able to fully record the aspects of Nile navigation and boats. Understanding Nile boats typology was and still is one of the hardest aspects of this research. This research was unique in this aspect of combining the historical and narrative accounts of the boats with their descriptions and photographs to better understand these typologies.

Nile boat types during the last 3 centuries had so many influences from a number of aspects. The first is and will always be the influence of ancient Egyptian traditions. These traditions are passed down due to the environment of the Nile itself. The traditions were not a stagnant aspect, it was affected by a connection with the outer world beyond the Nile valley. The relationship between Nile boatmen and the boatmen of the Mediterranean and the Red Sea played a crucial role in the change of the boatbuilding traditions on the Nile. This is reflected on both the use of terminology and techniques adopted especially from the Mediterranean boatbuilding traditions.

Despite compiling a list of the Nile boat typologies, along with their descriptions and use, there is still a need to dig deeper and further investigate each type of the Nile boats. This further investigation would help better understanding the real origin of the boats and how they were developed. Types such as the canja and the djerme were not discussed in detail, as there is still lack of resources regarding these two types of Nile boats. However, during the research, there appears to be some potential for further investigation of these two types. The latest research about the djerme is very promising, and there is possibilities for further archival studies in both the French and British national archives, as these boats were one of the most used auxiliary boats during the Napoleonic action in the Eastern Mediterranean.

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Despite that the qyassas are the most mentioned and researched boat type in this research. However, there are possibilities to better understand the holistic effect of this boat type on the Egyptian internal trade by studying the Egyptian National Archives. Research papers that were published recently during the past 3 years included a number of archival studies that discussed aspects of Nile boats and their typology. However, most of the researchers researching these topics are either interested in the archival aspect or in the historical aspect, and they disregarded the boatbuilding aspect of the data. Thus, one of the future research projects stemming from this thesis would be the study of Nile boat typologies using the Egyptian National Archives in Cairo.

Despite the fact that the researchers work on collecting enough information related to the topic of research and Nile boats in general. However, trying to fit everything in a PhD thesis is impossible. To date, the researcher managed to collect and sort thousands of photographs of the Nile boats. However, this collection is restricted to what the researcher could obtain mainly during online research. There is a wealth of data including Nile boat photographs which are yet to be digitized. One of the archives that holds very promising data is the archive of University of Durham. Where a dedicated archive of King 'Abbās Helmy II, King of Egypt is in their archive, as well as a dedicated archive to Sudan that include information from the field about the Whalers on the Nile.

The appearance of Whalers on the Nile was one of the very unique findings of this research. Despite that the topic of the Gordon Relief mission was the front and centre matter during the last two decades of the 19th century. However, the boats themselves did not get any attention from historians or scholars. The unique qualities of these boats, and the reason behind their making remained forgotten for decades. The researcher, however, could not trace the fate of these boats after 1886. A deeper digging in the Admiralty archive and UK shipbuilding archives might give better understanding of the history and fate of these boats.

The modernisation of Egyptian navy, or better yet, the establishing of modern navy under Mohamed Ali introduced the country and its boatmen to new technologies and boatbuilding methodologies. The introduction of steamboats and metal hull boats to the country left a deep impact on the boat building industry. However, this impact was not instantaneous, it took two to three decades for the effect to show on boatbuilding traditions on the Nile. However, other effects were more direct and swifter, these effects are related to military action in the country.

With each military wave there were two distinct aspects that were introduced to the Nile boats. The first is the modification of local boats as auxiliary or field hospitals. The second was introduction of foreign gunboats or troop carriers that are not indigenous to the country. The first aspect did not have a massive effect on boatbuilding traditions. However, the second aspect had a

deep impact on the traditions. Boatbuilders and boatmen on the Nile were affected by the introduction of these boats. The new and modified hull shapes as well as the new rigging and the unusual navigational techniques employed by foreign forces on the Nile had a direct impact on the traditions.

The biggest impact on Nile boatbuilding tradition during the last 3 centuries was the introduction of tourism on the Nile. Coupled with the work that Mohamed Ali and his successors after him done allowing foreign travellers, explorers, and merchantmen to work and explore the country. The need for new and “better” types of boats to convey the tourists up and down the Nile was the motive behind that change. It was not only the development of new technologies and the use of new material that changed boatbuilding traditions on the Nile during the last quarter of the 19th century, but the need to fulfil the taste of the European tourists. John Mason Cook and his Clydeside Nile boats had one of the most direct impacts on Nile boatbuilding traditions. As he was employing locals in boat his operation on the Nile and on his shipyard, made them precipitators for this new tradition. Almost two centuries later, Cook’s dahabiyah are now regarded as the true form of Nile traditions.

The second big shift of the Nile boatbuilding traditions was once again instigated by a one man’s vision. The motorizing of the internal water transportation project by Abdelnasser in the 1960s pressured a large number of traditional boatbuilders to change their traditions. A fleet of diesel barges suddenly appeared in a matter of 18 months. Like what happened with Cook’s dahabiyas, Nasser’s barges were iron hulled and were designed to take advantage of this material to have a bigger capacity. Cook needed a bigger capacity for tourists, Nasser needed the bigger capacity for cargo.

The introduction of the ambitious work to control the Nile flood was a very troublesome matter during the 19th and early 20th centuries. Mohamed Ali’s delta barrage that took decades and cost millions is one of the prominent examples. The second example is the Aswan Low Dam, with its two consecutive heightening and repairs. Both projects were built with the agricultural benefit as the sole focus. Navigation was secondary in these projects and other related projects. When both projects were finished, modified water locks were installed to allow navigation through these two artificial barriers. Since that time, and the Nile started having more navigational barriers. Navigating through the locks must have been an arduous task for the Nile boatmen. There are no accounts about the techniques that the Egyptian boatmen used to pass the locks.

However, these barriers did not have a direct impact on the designs of Nile boats. It only made the Nile boatmen adopt new techniques to be able to pass through the lock. Other interrupting structures that were built on the Nile were bridges. It was not until the 1970s that bridges were

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no longer movable, and they were built with very strict dimensions, and for the first time in millennia, Nile navigation was no longer important. These new barriers, however, did not kill the traditions in instance. Again, decades passed for this effect to be fully realized, and we are unlucky that this effect is irreversible.

There are a number of possible future projects and work that stemmed from this research. The first is an Honor Frost Foundation funded project that I obtained in 2020 in order to record tangible and intangible heritage of the Nile boats. During my research, and after modifying the outline of the thesis, I met a local boat enthusiast from Luxor. Mr. Abdelnasser Galal who is currently working as a lawyer, but he has been fond of Nile boats since early age. His family, including grandfather have been working on sailing boat on the Nile for decades. Mr. Galal introduced me to, probably, the last surviving wooden sailboat on the Nile. The boat that was used in fishing, it was propelled using a lateen sail and 4 oars.

During COVID-19 lockdown, our team of researchers spent more than two weeks with the owners of the boat, recording the boat and all its parts systematically, making a 3D model of the boat, and record all the intangible heritage that related to fishing and boats on the Nile in the area where the boat is located. The boat is currently stuck on the bank of the Nile at the Western end of the village of Edisat, 25 km south of Luxor. All the data that the team collected is archived, and after finalizing this PhD amendments I will return to the recordings, images, videos, and models to start working on analysis of all the data that was collected.

Currently I am still working on enlarging the Nile boats photograph archives. However, due to the immense volume of the images that are being digitized, it was very hard to incorporate everything in this thesis. On a weekly or biweekly basis, I come across new databases and new photographs of Nile sailboats. Furthermore, since 2021 I started collecting postcards and original photographs of Nile boats. This collection also includes more magic lantern slides.

Similarly, old photographs enthusiasts who own large personal archives are now reaching out to me, asking about the dates and boat types that appear in their collection. Thus, there will be future collaboration with other members of the collector's community who are keen to digitize and share their collections with the researchers and the public.

The final project that I would like to pursue after the thesis is done is the investigation of the National Archives in Cairo. Dar Al Wathaiq Alqawmia is the oldest archive of the Egyptian government. However, accessibility is the main issue, normally application process to gain access to the Archives takes months, if not years. Furthermore, researchers are not allowed to scan, photograph anything, and there is a maximum quota of 5 sources per person per day.

The main idea of visiting the National Archives is to investigate the records of Nile sailboats registration. As mentioned earlier, since the early days of the 20th century, registration numbers and symbols appeared on the bow of the cargo sailboats. All these registration numbers means that there is some more information about these boats hidden somewhere at the National Archive in Cairo.

Despite that the Nile boats are dying; they have morphed into other shapes and uses. It might be that the tourism industry, which started the decline of the traditional Nile boats in Egypt, but it might be the one which will save some specimen of this traditions for future generations to enjoy.

8.6 Chapter Eight Figures



Figure 170: Nile qyassa on the Suez Canal. Photo by James Francis Hurley 1940.



Figure 171: HMS HOWE passing the Suez canal in 1944 with qyassa sailing on the other direction.



Figure 172: Boat license in Arabic and English on the bow of a qyassa. Photograph by Frank Hurley 1943.



Figure 173: The pusher and dumb barge on the Nile. Nile Transport Co 2022.



Figure 174: Landing place nea Giza. Richard Parker 1965-1967. AUC Archive.



Figure 175: Qyassa laden with a cargo of pottery. Richard Parker 1965-1967. AUC Archive.



Figure 176: Repurposed qyassa to be used as a dahabiya on the Nile in Aswan. Photograph by the researcher 2017.

Appendix A Fieldwork Sites Portfolio (database)

This Appendix includes the locations in notes from the first fieldwork on the Nile, done between 5th and 20th of April 2017.

The first fieldwork was aiming at the identification and close examination of potential maritime traditions and maritime communities on the river Nile. During the month of March, a plan for site visit was created, using Google Maps, the researcher could pinpoint interesting and potential areas for research.

A Google Earth map was used in order to identify the targeted areas, where concentration of boats, or boat yards. Targets are an estimated number based on the Google Earth maps. Some targets are within 1 km radius of each other. Targets were refined during the fieldwork.

Fieldwork Plan:

- Driving from Alexandria To Luxor.
- Nile Cruise between Luxor and Aswan.
- Aswan/Nubia scouting. (4 targets)
- Aswan – Edfu. (7 targets)
- Edfu – Luxor. (18 target)
- Luxor. (11 target)
- Luxor – Qena. (6 targets)
- Qena - Nagaa Hammadi. (8 targets)
- Nagaa Hammadi – Sohag. (3 targets)
- Sohag – Asyut. (9 targets)
- Asyut – Minya. (4 targets)
- Minya – Beni Suef. (13 Targets)
- Beni Suef – Cairo. (8 targets)

Total Targets 91



LB	Leisure Boat
CB	Cargo Boat
F	Ferry
AN	Anchorage
BY	Boat Yard
FB	Fishing Boats

Site Code Name:	ASWAN 4
Site Coordinates:	24° 5'4.55"N 32°53'23.45"E
Date Visited:	07/04/2017
Site Type:	Leisure boat anchorage
Site Description and significance:	<p>The area around Elephantine Island is full of leisure sailboats. The boats are all metal hull, single sail boats, which are being used for touristic purposes only, and are being used in certain seasons in that area, mainly during Easter and during Jan/Feb of each year, as the wind would be favourable and a high demand on leisure boats.</p> <p>That doesn't mean that there aren't any leisure boats working during other times of the year, however the number of the boats deployed on the Nile increases during the periods mentioned above.</p>
Future Work:	Further assessment
New Code Name:	LB_AN_ASWAN_001

Appendix A

Site Code Name:	MODERN SHIPYARD/FERRY BOAT
Site Coordinates:	24° 6'45.24"N 32°53'33.16"E
Date Visited:	10/04/2017
Site Type:	Ferry boats and modern small shipyard
Site Description and significance:	<p>This site is on the Western bank of the Nile, the waterfront of a village called West Aswan Village.</p> <p>There is a modern Car Ferry boat transporting vehicles between the two banks. The nearest bridge is about 10 km away from the down town, and this ferry serve as the main transportation between the East and West Bank in Aswan.</p> <p>On the Southside of the docks, there is a small boat yard, where couple of boat builders are welding modern boats.</p> <p>Further South there is the personnel ferry boats.</p>
Future Work:	Further assessment
New Code Name:	F_BY_ASWAN_002

Site Code Name:	Abandoned Cabin Boats
Site Coordinates:	25°13'40.16"N 32°37'47.80"E
Date Visited:	12/04/2017
Site Type:	Leisure cabin boats/Dahabeyah
Site Description and significance:	<p>This site was not on the list of interesting sites, we came across it by pure chance while examining another site on the east bank, we had to drive 30 km to reach the site.</p> <p>The place is a very small village, with narrow roads and houses made out of mudbricks.</p> <p>We found 2 purpose made Dahabeyahs and one cargo boat which was converted into a cabin boat for leisure cruises.</p>
Future Work:	Further assessment
New Code Name:	LB_AN_ESNA_003

Appendix A

Site Code Name:	Alwaress Boat yard
Site Coordinates:	25°14'55.86"N 32°35'17.22"E
Date Visited:	12/04/2017
Site Type:	Leisure cabin boats/Dahabeyah
Site Description and significance:	<p>This site was found during the internet research, and could not be reached on the ground.</p> <p>There is an official website for this boat yard, which is very interesting, and the owner argue that his family have been working in the boatbuilding tradition for the last 100 years.</p> <p>http://dahabeyah-building.com/index.php</p>
Future Work:	Further assessment
New Code Name:	LB_AN_ESNA_004

Site Code Name:	ESNA 2
Site Coordinates:	25°16'43.45"N 32°33'42.06"E
Date Visited:	12/04/2017
Site Type:	Leisure cabin boats/Dahabeyah/
Site Description and significance:	this is a small village where a number of leisure boats were moored by the river bank
Future Work:	Further assessment
New Code Name:	LB_AN_ESNA_005

Appendix A

Site Code Name:	ESNA 1
Site Coordinates:	25°17'16.81"N 32°33'34.09"E
Date Visited:	12/04/2017
Site Type:	Leisure cabin boats/Dahabeyah
Site Description and significance:	A number of large Dahabeyahs were anchored and moored together in this area. There was not any direct access to the Nile in the area, but we could see the masts from the road.
Future Work:	Further assessment
New Code Name:	LB_AN_ESNA_006

Site Code Name:	ESNA 3
Site Coordinates:	25°17'57.20"N 32°33'22.02"E
Date Visited:	12/04/2017
Site Type:	Leisure cabin boats/Dahabeyah
Site Description and significance:	<p>This is the main docking platform of the Dahabeyahs in Esna. Esna is now the centre for Traditional Dahabeyahs, where tourists can rent the whole boat and enjoy sailing on the Nile for few days.</p> <p>Dahabeyahs are propelled by two large lateen sails, and most big boats are accompanied by a Tug boat, which would tow the boat when there is no wind.</p> <p>Modern Dahabeyahs are normally between 48 and 50 meters long, 7 to 8 meters wide.</p>
Future Work:	Further assessment
New Code Name:	LB_AN_ESNA_007

Appendix A

Site Code Name:	ESNA 4
Site Coordinates:	25°18'37.31"N 32°33'7.58"E
Date Visited:	12/04/2017
Site Type:	Fishing boats
Site Description and significance:	<p>This site is in the middle of the Esna Water Lock.</p> <p>This water lock is one of the biggest water locks on the Nile.</p> <p>A number of small fishing boats are moored there, boats are 3 to 4 meters long, and about 1 meter wide, all boats were made out of metal, imitating the wooden fishing boats.</p> <p>The boat have two wooden oars, and the traditional practice is to cast the fishing nets near the shore then collect it on the next day.</p>
Future Work:	Further assessment
New Code Name:	FB_AN_ESNA_008

Site Code Name:	ESNA 9
Site Coordinates:	25°24'8.46"N 32°33'52.30"E
Date Visited:	12/04/2017
Site Type:	Boat yard/ Dahabeyah
Site Description and significance:	<p>It was a well-hidden ship yard, we reached it, and I managed to talk briefly with the owner of the boat yard Mr. Soutan. All the boats that were being built in this shipyard were metal.</p> <p>I examined only one boat of interest, it appeared from the distance to be wooden, however, I was wrong and it was one of cargo boats that used to carry stones, which is now being converted into a cabin boat. The boat was 18 meter (said Mr. Soutan) with two massive lateen sails. He told me that there is no more wooden boats on the Nile, or at least around his area, and that this metal hull boat was made 40 years ago. He also said that wooden boats are only used in the Red Sea, but not anymore on the Nile.</p>
Future Work:	Further assessment
New Code Name:	LB_BY_ESNA_009

Appendix A

Site Code Name:	LUXOR 10
Site Coordinates:	25°40'54.57"N 32°37'12.98"E
Date Visited:	12/04/2017
Site Type:	Dahabeyah
Site Description and significance:	<p>The Western bank in Luxor is where all the Dahabeyahs that originates from Luxor are moored, again it's a touristic boats.</p> <p>The Western bank in Luxor is the main archaeological side of the city, where all the ancient Egyptian tombs could be found.</p>
Future Work:	Further assessment
New Code Name:	LB_AN_LUXOR_010

Site Code Name:	LUXOR 11
Site Coordinates:	25°41'50.58"N 32°37'50.19"E
Date Visited:	12/04/2017
Site Type:	Converted Dahabeyah/ anchorage
Site Description and significance:	Another anchorage place for the Dahabeyahs.
Future Work:	Further assessment
New Code Name:	LB_AN_LUXOR_011

Appendix A

Site Code Name:	LUXOR 12
Site Coordinates:	25°42'6.18"N 32°37'59.70"E
Date Visited:	12/04/2017
Site Type:	Converted Dahabeyah/ anchorage
Site Description and significance:	<p>Another anchorage place for the Dahabeyahs, where a number of converted boats are anchored.</p> <p>The old cargo boats were being transformed into cabin boats, like the one that was being converted at the ship yard ESNA 9.</p> <p>This whole area between LUXOR 10 AND LUXOR 12 is the anchorage of the dahabeyahs with all of its shapes and sizes and capacities on the Eastern bank of the Nile in Luxor.</p>
Future Work:	Further assessment
New Code Name:	LB_AN_LUXOR_012

Site Code Name:	LUXOR 17
Site Coordinates:	25°45'52.88"N 32°40'9.24"E
Date Visited:	12/04/2017
Site Type:	Boat Yard
Site Description and significance:	A big Ship Yard where maintenance for floating hotels and other big boats is being done.
Future Work:	Further assessment
New Code Name:	LB_BY_LUXOR_013

Appendix A

Site Code Name:	QENA 3
Site Coordinates:	26° 9'8.50"N 32°42'9.26"E
Date Visited:	13/04/2017
Site Type:	Anchorage
Site Description and significance:	Motor cruising boats, and small fishing boats.
Future Work:	Further assessment
New Code Name:	FB_AN_QENA_014

Site Code Name:	SANDAL
Site Coordinates:	26°45'59.24"N 31°33'19.33"E
Date Visited:	14/04/2017
Site Type:	Anchorage
Site Description and significance:	<p>This target was not on the list, however, we've found a single masted sailboat, moored to the eastern bank of the Nile in the middle of nowhere.</p> <p>The boat most probably is used for light cargo and/or for ferrying people.</p>
Future Work:	Further assessment
New Code Name:	CB_AN_SOHAG_015

Appendix A

Site Code Name:	SANDAL 2
Site Coordinates:	26°46'20.28"N 31°32'52.27"E
Date Visited:	14/04/2017
Site Type:	Anchorage
Site Description and significance:	<p>This is another target that was not on the original list of targets.</p> <p>The Island of Al Haridi is one of the Islands in the middle of the Nile, the Island is heavily cultivated with wheat.</p> <p>The boat was staked with wheat stacks awaiting to be transported to the main land.</p>
Future Work:	Further assessment
New Code Name:	CB_AN_SOHAG_016

Site Code Name:	SOHAG 3
Site Coordinates:	26°49'30.66"N 31°31'19.32"E
Date Visited:	14/04/2017
Site Type:	Anchorage
Site Description and significance:	<p>It is one of the most interesting targets, it's the place where those boats unload limestone, I knew previously that this stone is coming from queries near El Minya but did not know the exact place.</p> <p>The place is a docking place for the cargo boats carrying limestone from Minya to the nearby villages, where it is used to build houses.</p>
Future Work:	Further assessment
New Code Name:	CB_AN_SOHAG_017

Appendix A

Site Code Name:	ASYUT 2
Site Coordinates:	27°10'28.50"N 31°13'28.13"E
Date Visited:	14/04/2017
Site Type:	Ferry Boats
Site Description and significance:	The Eastern bank of the Nile in this area few kilometres south Asyut is filled with ferry boats, single-masted, and looks like the Sandals found to the south of this area.
Future Work:	Further assessment
New Code Name:	F_AN_ASYUT_018

Site Code Name:	ASYUT 1
Site Coordinates:	27°10'32.20"N 31°13'10.19"E
Date Visited:	14/04/2017
Site Type:	Ferry Boats
Site Description and significance:	<p>The Eastern bank of the Nile in this area few kilometres south Asyut is filled with ferry boats, single-masted, and looks like the Sandals found to the south of this area.</p> <p>The ferry boats were the main transportation between the big city Asyut and this small village on the east bank of the Nile.</p>
Future Work:	Further assessment
New Code Name:	F_AN_ASYUT_019

Appendix A

Site Code Name:	ASYUT 1
Site Coordinates:	27°10'32.20"N 31°13'10.19"E
Date Visited:	14/04/2017
Site Type:	Fishing Boats
Site Description and significance:	A number of small fishing boats were found in the area.
Future Work:	Further assessment
New Code Name:	FB_AN_ASYUT_020

Site Code Name:	ASYUT 6
Site Coordinates:	27°12'9.69"N 31°11'5.04"E
Date Visited:	15/04/2017
Site Type:	Fishing Boats
Site Description and significance:	A number of small fishing boats were found in the area just behind the water lock.
Future Work:	Further assessment
New Code Name:	FB_AN_ASYUT_021

Appendix A

Site Code Name:	ASYUT 7
Site Coordinates:	27°12'27.85"N 31°10'46.66"E
Date Visited:	15/04/2017
Site Type:	Fishing Boats
Site Description and significance:	A number of small fishing boats were found in the area just behind the water lock.
Future Work:	Further assessment
New Code Name:	FB_AN_ASYUT_022

Site Code Name:	MINYA 2
Site Coordinates:	28° 8'50.50"N 30°44'25.68"E
Date Visited:	16/04/2017
Site Type:	Ship Yard
Site Description and significance:	A big ship yard to the North of Minya, where a number of big cruising ships are being fixed.
Future Work:	Further assessment
New Code Name:	LB_BY_MINYA_023

Appendix A

Site Code Name:	MINYA FERRY 2
Site Coordinates:	28°17'37.46"N 30°44'26.88"E
Date Visited:	16/04/2017
Site Type:	Cargo boat loading docks
Site Description and significance:	This is the main place where the cargo boats anchor to load their cargo of lime stone. This small town is the frontier of the biggest lime stone quarry in Egypt.
Future Work:	Further assessment
New Code Name:	CB_AN_MINYA_024

Site Code Name:	MINYA 4
Site Coordinates:	28°17'52.72"N 30°44'27.09"E
Date Visited:	16/04/2017
Site Type:	Cargo boat loading docks
Site Description and significance:	This is the main place where the cargo boats anchor to load their cargo of lime stone. This small town is the frontier of the biggest lime stone quarry in Egypt.
Future Work:	Further assessment
New Code Name:	CB_AN_MINYA_025

Appendix A

Site Code Name:	BENI SUEF 2
Site Coordinates:	29° 3'25.07"N 31° 5'34.23"E
Date Visited:	16/04/2017
Site Type:	Fishing Boats
Site Description and significance:	The concentration of small fishing boats
Future Work:	Further assessment
New Code Name:	FB_AN_SUEF_026

Site Code Name:	BENI SUEF 4
Site Coordinates:	29°34'33.16"N 31°16'20.62"E
Date Visited:	16/04/2017
Site Type:	Cargo Boat
Site Description and significance:	A car ferry boat and I found one of the double sail boats, that looks like the ones in Masandah (The site studied during the MA).
Future Work:	Further assessment
New Code Name:	CB_AN_SUEF_027

Appendix A

Site Code Name:	MASANDAH
Site Coordinates:	29°37'52.66"N 31°16'7.85"E
Date Visited:	16/04/2017
Site Type:	Cargo Boat
Site Description and significance:	I've visited this village during my MA studies, and conducted couple of days of participant observation there. There are still fewer boats that it used to be two years ago, but still have the big old double-masted cargo boat mooring to the western bank of the Nile.
Future Work:	Further assessment
New Code Name:	CB_AN_SUEF_028

Site Code Name:	BOAT YARD
Site Coordinates:	29°49'0.99"N 31°17'26.31"E
Date Visited:	16/04/2017
Site Type:	Ship Yard
Site Description and significance:	Another big ship yard for cruising ships.
Future Work:	Further assessment
New Code Name:	LB_BY_CAIRO_029

Appendix A

Site Code Name:	GIZA SHIPYARD
Site Coordinates:	29°54'1.98"N 31°16'42.31"E
Date Visited:	16/04/2017
Site Type:	Ship Yard
Site Description and significance:	Another big ship yard for cruising ships.
Future Work:	Further assessment
New Code Name:	LB_BY_CAIRO_030

Site Code Name:	GOLD ISLAND
Site Coordinates:	29°59'17.06"N 31°13'14.92"E
Date Visited:	16/04/2017
Site Type:	Ferry Boat
Site Description and significance:	<p>Gold Island is one of the poorest areas in Cairo, I've visited it before during my MA research, there is a sailing ferry boat, and a small boat yard for building small boat on the other side of the island.</p> <p>Big cargo boats sometimes sail down to this island, and collect haystacks to transport it up the Nile.</p>
Future Work:	Further assessment
New Code Name:	F_AN_CAIRO_031

Appendix B Thomas Cook Archive

This Appendix includes not only the content of the Thomas Cook Archives (Egypt), but also details of the transition that happened to the archive amidst the liquidation of the Thomas Cook Company. In the following lines is a letter showing the importance of the Thomas Cook Archive to this research, the thing that led to the saving of the Archive.

B.1 Letter to save Thomas Cook Archive

A large group of UK based historians, archivists, and researchers are currently working together to save one of the most important archives in our modern history. An archive that includes documents about a new era of tourism, globalization and access to all those faraway lands for ordinary people, marking the start of modern tourism as we now know it.

#SaveThomasCookArchive

Few months ago, Paul Smith, the archivist of the Thomas Cook Historical Archives for 23 years, was made redundant, and now the archives are at risk amid the imminent liquidation of the company.

This article is an effort to highlight the richness and importance of the Thomas Cook Archives, not only for British history, but to the history of international travel. I have also written similar articles on social media platforms in order to reach as wide an audience as possible.

This article will include my personal story and encounters with the archive, in order to shed some light on a small aspect of the archive collection. Here is my story with the archive:

It all started two years ago with this book written by Andrew Humphreys. Running to 184 pages, with over 220 photographs and illustrations, *On the Nile* was published by the American University in Cairo Press in spring 2015. Check out Andrew's blog:

http://grandhotelsegypt.com/?page_id=1531

Being the Nile boats nerd that I am (judging by all the colourful sticky notes I used on the book's pages), I was interested to know more. So, as any researcher would, I emailed Andrew, and he agreed on meeting me at the British library. We had an afternoon discussing the book over coffee, and he advised me to go and check the Thomas Cook Archives in Peterborough.

I made an appointment with the Archivist Paul Smith and went to Peterborough with my suitcases as I was flying to Egypt the next day. The Archive is on the ground floor, crammed with

Appendix B

hundreds of folders and books. As it is an appointment-only access, Paul had already prepared all the Egypt folders for me to examine.

He had a list of all the content of each folder printed and ready for me too.

I went through everything...

...from the original Thomas Cook contracts with the Egyptian government, to a news scrapbook in Arabic (translated into English) about the company in Egypt. Dinner menus, guide books, and passenger lists... Blueprints of the Thomas Cook & Son Co Ship yard in Bulaq - Cairo with full details of a newly acquired space on the Nile-front in Bulaq... Hundreds of Amazing photographs of the T&S Co Flotilla of Nile boats... The contracts that Thomas Cook had with the British Government to build whaleboats to transport troops down the Nile to Sudan on the Gordon relief mission...No only that, but TC&S Co was in the business of building "custom made" Dahabeahs for the European elite.

Finally in the 1950s, Thomas Cook & Son Co Egypt was nationalized, and all its assets in Egypt were sold.

Here is an inventory list of the Nile boats that were sold or modified... One of which in (Fostat) belongs to the American Research Centre in Egypt since 1960s.

I really hope this all will help in saving the archives for future research work.

Currently, Mike Anson, ABH Archives Representative, is working on putting a case together for acquiring the archives. The Business Archives Council, through the Crisis Management Team for business archives, is coordinating a response to ensure that the Archive is secured for the future. To this end we need letters and statements of support from those who have used, or who have an interest, in the Thomas Cook Archive. Please contact Mike Anson michael.anson@bankofengland.co.uk if you can help in making the case for the value and significance of these records and for the need for them to be properly maintained and made available to current and future users.

B.2 Saving the Thomas Cook Archive

International travel company Thomas Cook, founded in Leicester, ceased trading on 23rd September 2019 and entered liquidation after 178 years. The company's headquarters in Peterborough housed an extensive archive dating back to its foundation in 1841.

The Business Archives Council and the Crisis Management team for Business Archives worked with the Official Receiver who agreed that the archive should be preserved for the nation. The

aim was to transfer it to a suitable archive repository offering professional care, storage and public access.

Suitable repositories with an interest in the collection were invited to bid against a set of criteria established by the team. In late November 2019 a panel of representatives from the Business Archives Council, Official Receiver, the archive profession and academic community assessed the proposals and chose the Record Office for Leicestershire, Leicester and Rutland as the future home for the collection.

The Record Office for Leicestershire, Leicester and Rutland is run by Leicestershire County Council in partnership with Leicester City Council and Rutland County Council. It exists to preserve and make available the written heritage of the two counties and city of Leicester. Based in Wigston Magna, the office holds documents dating back almost 1000 years including ancient charters, deeds, wills, maps, photographs and many other records essential for the understanding of our local and national history.

This vast archive has now become our largest collection occupying the equivalent of 2250 of our standard boxes and contains material from the earliest years of Thomas Cook's foundation through to the early 21st century.

It includes travel diaries, tickets, posters and other advertising material, brochures, scrapbooks and photographs. There are also financial ledgers, minutes and some records of staff and customers.

In addition, there are many artefacts including merchandise, awards, clothing and some personal items which belonged to John Mason Cook, son of the founder.

B.3 Thomas Cook Archive Contents (Egypt)

The following list include a scan of printout of all the archive boxes that include data about or from Thomas Cook and Son Co – Egypt. This was collected from the Previous Thomas Cook Archives, Mr. Paul Smith, during the researcher visit to the archive in 2017.

Black Box 1 – Provisional Contents List (May 2000)

NB: Items in the box are filed in the following order:

Year unknown	Blank form for a First Class Engineer's Agreement with TC&S, Egypt.
Year unknown	Original list of steamers on the Nile belonging to the Egyptian government. Includes steamer status and specification details.
1879	Card giving details of a Personally Conducted Tour to Palestine, Egypt, Constantinople, Athens & Italy. Includes names of tour party.
1880 (1966)	Typed copy of the original contract for steamers, made between Rostovitz (TC&S) and the Egyptian Government.
1883	Correspondence (French) relating to travel arrangements made by Col. E Zohrab. Also receipts.
1884 – 1887	Bundle of correspondence and figures relating to Thos. Cook & Son's business in Egypt. Includes numerous pages of accounts information (fragile).
1888	Timetable for Cook's Cheap Express Service between Assiout and Assouan, with fare information.
1888 - 1889	Papers relating to goods shipped to Cairo, capital accounts and those of Messrs. Bow & McLachlan.
1889	Two copies of mortgage agreements between Pagnon and Cook's for the Egyptian hotels at Luxor and Karnak. Also a letter.
1889	Copy of a buffet agreement between the Egyptian state railways and Rostowitz (on behalf of TC&S).
Jan 1890	Passenger list for "Tewfik" Nile steamer
Feb 1891	Passenger list for "Tewfik" Nile steamer
Nov 1891	Cook's Mail Steamer Service on the Nile – timetable, with fare information.
1891 – 1897	Copies of miscellaneous letters – significance unknown.

1892	Five photocopied pages from "The Railway World", describing the joys of travelling aboard a Nile steamer and giving details of Cooks' activities on the Nile.
1893	Report from Major R H Brown, RE, on the preservation of the temple at Karnak, with a letter from M. de Morgan.
1893	Pamphlet, "Department of Egyptian Antiquities – Note on the Excavations executed by the Department of Egyptian Antiques". Includes details of finds at individual sites.
1897	Copy of an agreement between John Mason Cook and the Compagnie Internationale des Grands-Hotels.
1899	Correspondence relating to the construction of a new hotel (Cataract) at Assouan.
1899	Agreement between Thos. Cook & Son and Mr F Pagnon to conduct the Cataract Hotel at Assouan.
Feb 1900	Passenger list for "Rameses the Great" Nile steamer
1905	Copies of documents relating to options for sale of the Cataract Hotel.
1926	Pamphlet, "Thos. Cook & Son in Egypt, 1869–1926". (Published by Cooks?) Gives a profile of the company's activities in Egypt since 1869. Includes B/Ws of the Cairo office interior and of the "Arabia" steamer.
1930?	Bulky handwritten guide to private hire basic rates for Nile Service steamers and dahabeahs. "Confidential – General Manager's Copy". Exact year unknown. Dividers in very fragile condition.
1930	Deck plans of the stern-wheel steamers, "Delta" and "Thebes".
1930	Deck plans of the steamers, "Egypt", "Arabia", "Thebes", "Damietta", "Delta", "Rosetta" and "Sudan".
1930?	Pamphlet – "Sudan Government, Railways & Steamers – Plans and Illustrations of River Craft and Rolling Stock". Includes numerous B/Ws of steamers & trains.

- 1933 Three copies of a large brochure, "Engineering on the Nile", which details Cook's technical activities in Egypt.
- 1935 Typed extract from "A Lifetime in Egypt" by Mabel Caillard. It describes John M Cook's character and his work on the Nile. He was a friend of her family.
- 1951 Extract from the May/June edition of the Anglo-Egyptian Chamber of Commerce Journal. Entitled "Irrigation in Egypt". Includes B/Ws of various locks and dams.
- 1951 Extract from the June 1951 edition of the Anglo-Egyptian Chamber of Commerce Journal. Entitled "Inland Navigation in Egypt"
- 1989 Glossy brochure issued to commemorate 120 years of TC activities in Egypt. Includes an advertisement for four water-colours of Egyptian scenes by Andrew Hewkin.
- 1990? Glossy brochure advertising the Cook's Nile Fleet and the amenities it provides.

Black Box 2 – Provisional Contents List (May 2000)

NB: Items in the box are filed in the following order:

Jan 1891	Passenger list for M S "Cleopatra"
Feb 1891	Passenger list for M S "Cleopatra"
Nov 1891	Passenger list for M S "Cleopatra"
Dec 1891	Passenger list for M S "Cleopatra"
Jan 1892	Passenger list for M S "Cleopatra"
Feb 1892	Passenger list for M S "Cleopatra"
Mar 1892	Passenger list for M S "Cleopatra"
Dec 1892	Passenger list for M S "Cleopatra"
<hr/>	
Feb 1890	Passenger list for P S "Amosis"
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Feb 1890	Passenger list for P S "Amcnartas"
Jan 1891	Passenger list for M S "Amenartas"
Feb 1891	Passenger list for M S "Amenartas"
Jan 1892	Passenger list for M S "Amenartas"
Feb 1892	Passenger list for M S "Amenartas"
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Feb 1891	Passenger list for M S "Nefort-ari"
Jan 1892	Passenger list for M S "Nefertari"
Feb 1892	Passenger list for M S "Nefertari"
Nov 1892	Passenger list for M S "Nefertari"
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Jan 1890	Passenger list for P S "Oonas"

Feb 1890	Passenger list for P S "Oonas"
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Feb 1890	Passenger list for P S "Sethi" (private party)
Nov 1890	Passenger list for P S "Sethi"
Dec 1890	Passenger list for P S "Sethi"
<hr/>	
Feb 1890	Passenger list for P S "Tewfik"
Dec 1890	Passenger list for P S "Tewfik"
Dec 1890	Passenger list for P S "Tewfik"
Jan 1892	Passenger list for P S "Tewfik"
<hr/>	
Feb 1890	Passenger list for P S "Rameses the Great"
Mar 1890	Passenger list for P S "Rameses the Great"
Dec 1890	Passenger list for P S "Rameses the Great"
Dec 1890	Passenger list for P S "Rameses the Great"
Jan 1891	Passenger list for P S "Rameses the Great"
Feb 1891	Passenger list for P S "Rameses the Great"
Nov 1891	Passenger list for P S "Rameses the Great"
Dec 1891	Passenger list for P S "Rameses the Great"
Jan 1892	Passenger list for P S "Rameses the Great"
Feb 1892	Passenger list for P S "Rameses the Great"
Feb 1892	Passenger list for P S "Rameses the Great"
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Jan 1890	½ Passenger list for P S "Rameses"
Feb 1890	Passenger list for P S "Rameses"

Jan 1891	Passenger list for P S "Rameses"
Feb 1891	Passenger list for P S "Rameses"
Mar 1891	Passenger list for P S "Rameses"
Dec 1891	Passenger list for P S "Rameses"
Dec 1891	Passenger list for P S "Rameses"
Dec 1892	Passenger list for P S "Rameses"
Feb 1892	Passenger list for P S "Rameses"
Nov 1892	Passenger list for P S "Rameses"
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Jan 1890	Passenger list for P S "Mohammed Ali"
Feb 1891	Passenger list for P S "Mohammed Ali"
Feb 1891	Passenger list for P S "Prinz Mohamed Ali" (German version)
Jan 1892	Passenger list for P S "Mohamed Ali"
Jan 1892	Passenger list for P S "Mohamed Ali"
Feb 1892	Passenger list for P S "Mohamed Ali"
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Jan 1890	Passenger list for P S "Prince Abbas"
Feb 1890	Passenger list for P S "Prince Abbas"
Mar 1890	Passenger list for P S "Prince Abbas"
Jan 1891	Passenger list for P S "Prince Abbas"
Feb 1891	Passenger list for P S "Prince Abbas"
Mar 1891	Passenger list for P S "Prince Abbas"
Mar 1891	Passenger list for P S "Prince Abbas"
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Dec 1890	Passenger list for M S "Hatasoo"
Dec 1891	Passenger list for M S "Hatasoo"
Jan 1891	Passenger list for M S "Hatasoo"
Jan 1891	Passenger list for M S "Hatasoo"
Feb 1891	Passenger list for M S "Hatasoo"
Jan 1892	Passenger list for M S "Hatasoo"
Jan 1892	Passenger list for M S "Hatasoo"
Feb 1892	Passenger list for M S "Hatasoo"
Dec 1897	Passenger list for M S "Hatasoo"



Year unknown

Original engineer's plan of the "Papeterie" at Boulac, with measurements. Signed by Thubron on behalf of TC&S. Plans prepared for John Mason Cook.

1885 – 1924

Folder of miscellaneous accounts papers relating to TC&S (Egypt). Includes a list of Egyptian staff for 1888.

1886 – 1889

Handwritten copy of private business accounts for Rostovitz, 1888-9.

1894

Miscellaneous accounts information relating to TC&S (Egypt) Ltd. Capital and Ledger accounts.

1894 – 1895

Bundle of papers (in envelope) containing figures relating to the balance sheet of Thos. Cook & Son (Egypt) Ltd for 1894/5.

1894 – 1903

Blue envelope containing copies of agreements between TC&S (Egypt) and E A Harrison, amongst others.

1895

Agreement of sale between Messrs. Henri Neker and Thos. Cook & Son. Includes a typed transcript and original site plans.

✧ 1895	Agreement between Thos. Cook & Son (Egypt) Ltd and the Egyptian Government, relating to land. Includes original site plan.
1895	Copy of a sale agreement between Thomas Albert Cook and Aubrey Harrison.
1895	Indenture between W P Treloar and C P J Berkeley (TC&S(Egypt)Ltd). Appointment of a new trustee to trust deed.
1896	Agreement (written in French) made with the Egyptian Government with regard to Boulac. Signed by Payne (?)
1901	Thos. Cook & Son (Egypt) Ltd – pamphlet containing the Report of the Directors, with statement of accounts, for presentation at the AGM.
1906 – 1908	Accounts papers relating to Helouan – electricity supply and maintenance.
1906 – 1926	Collection of newspaper clippings from the Egyptian Press – items relating to the activities of TC&S there.
1917 – 1929	Collection of accounts papers relating to the affairs of the Cairo office, and of TC&S (Egypt) in general.
1919	Letter from Bischoff, Coxe, Bischoff & Thompson relating to the debenture trust.

Black Box 3 – Provisional Contents List (May 2000)

NB: Items in the box are filed in the following order:

Year unknown	Blank copy of Memoranda of Agreement for the appointment of doctors aboard Cook's Nile Steamers.
Year unknown	Fourteen photocopied versions of a pamphlet on Egyptian writing.
1883 – 1886	Seven army bulletins issued by the British Army Head Quarters at Cairo. Some include mentions of Cook's steamers and reduced travel fares for officers' families, etc. Also details on the movements of troops in the region.
1884 – 1885	23 army bulletins issued by the British Army Headquarters at Cairo. Include mentions of Cook's arrangements for transport and supplies. Also details of the movements and activities of troops.
 1885	Booklet – "The Nile Expedition 1884/5. Mr John M Cook's Visit to the Soudan – an address delivered at the Royal Normal College for the Blind, Upper Norwood. Printed for private circulation only. 2 copies.
1887 – 1897	Miscellaneous correspondence from J Walker Arnott, relating to the Tabeetha Mission School at Jaffa. Also "Personal Explanations" published by J Walker Arnott to mark the Schools's jubilee celebrations (1888?). She mentions Cook's.
1888	Two copies of detailed Expedition Accounts Balances, one for settlement with Rostovitz, the other with Pagnon.
1888 – 1893	Folder of documents relating to the Luxor Hospital, of which John Mason Cook was a principal sponsor. Includes lists of subscriptions, patient turnover figures, building plans, correspondence and details of staff appointments. Also a publicity leaflet issued in 1893, giving details of the 1891 opening ceremony and a transcript of the address made by JMC.

1893 – 1897	Bundle of correspondence relating to the business in Egypt. Includes letters between John Mason Cook and Frank, JMC and Bert, JMC and Faulkner, JMC and Harrison. Also copious correspondence with Kingsford concerning details of plans and arrangements. Also one letter to JMC from “nephew Will”. Rough list of letter subjects is included.
1895 – 1896	Pamphlet – “Report of the Tabeetha Mission at Jaffa” for 1895, with correspondence to John Mason Cook from Miss E Walker-Arnott. Also a receipt for a donation from JMC.
1896 – 1897	Three documents relating to payments for the Dongola expedition equipment and arrangements.
1907 – 1932	Documents relating to Slatin Pasha, formerly Governor and Commandant of the troops at Darfur. Includes an extract from his autobiography relating to a sword belonging to SFP, returned to him by John Mason Cook. Also an obituary following his death in 1932.
1994	Colour copy of Jo Spiers’ cartoon-style illustration of a Cook’s camel in the desert. Also correspondence with Fiona Kelly.



Black Box 4 – Provisional Contents List (May 2000)

NB: Items in the box are filed in the following order:

- | | |
|-------------|--|
| 1891 – 1893 | Miscellaneous correspondence re: accounts. Also receipts. |
| 1894 | Correspondence relating to the Egypt part of Thos. Cook & Son and its conversion into a Limited Liability Company – Thos. Cook & Son (Egypt) Ltd. |
| 1894 | Prospectus advertising Thomas Cook & Son (Egypt) mortgage debentures, with an application form. Includes a list of the Company officials and directors. |
| 1894 | Three copies of an agreement between John Mason Cook and Thomas Cook & Son (Egypt) Ltd. |
| Jan 1904 | Notice of an Extraordinary General Meeting of the Shareholders of Thos. Cook & Son (Egypt) Ltd and reviewing events of the previous meeting held. |
| Feb 1904 | Copy of an agreement between Frank and Ernest Cook and Thomas Cook & Son (Egypt) Ltd. |
| 1894 | Foolscap pamphlet – indenture between John Mason Cook, Arthur Riversdale Grenfell (of Beaconsfield) and William Purdie Treloar (of London). |
| 1894 | Foolscap pamphlet – “Memorandum and Articles of Association of Thomas Cook & Son (Egypt) Limited, incorporated 1894”. Signed by A Faulkner. |
| 1895 | Correspondence from Faulkner and others relating to the accounts of Thos. Cook & Son (Egypt) Ltd. Includes some letters to Busby. |
| 1895 – 1897 | Broadsheet summary of accounts for Thos. Cook & Son (Egypt) Ltd – for three financial years. Also shows balance net profit. |
| 1904 | Agreement between Frank, Ernest and Bert Cook regarding the operation of Thomas Cook & Son (Egypt) Ltd after the death of JMC. Signed by all three. |
| 1922(?) | Copies of solicitors’ letters relating to the estate of Mr T A (“Bert”) Cook and the assets he held. Includes details of valuations of the Egyptian and other areas of the business. |

1922 – 1923	Correspondence and accounts relating to the Assiout Property Account. Also material on the Boulac Engineering Works.
1930	Handbook of Egyptian Securities 1930 – compiled by G L Mortera, Stock & Share Brokers.
1930 – 1931	Tourist Development Association of Egypt – Annual Report and Balance Sheet.
1931 – 1932	Tourist Development Association of Egypt – Annual Report and Balance Sheet.
1932 – 1933	Tourist Development Association of Egypt – Annual Report and Balance Sheet
1933 – 1934	Tourist Development Association of Egypt – Annual Report and Balance Sheet
1933 – 1934	Tourist Development Association of Egypt – Report on the Publicity and Propaganda Campaign for Season 1933 – 1934.
1934 – 1935	Tourist Development Association of Egypt – Report on the Publicity and Propaganda Campaign for Season 1934 – 1935.
1935 – 1936	Pamphlet - Tourist Development Association of Egypt – Combined Ticket Conference, 1935 – 1936
1936 – 1937	Tourist Development Association of Egypt – Annual Report and Balance Sheet, 1936 – 1937
1938 – 1939	Tourist Development Association of Egypt – Annual Report and Balance Sheet, 1938 – 1939.
1935 – 1936	Tourist Development Association of Egypt – Annual Report and Balance Sheet, 1935 – 1936
1933	Confidential notes written to complement Mr Rene Margot's recent report on the organisation of Thos. Cook & Son, Ltd and Wagons-Lits in Egypt. Its aim is to examine the potential for co-operation between the two companies. Includes a profile of current activities and financial status.
1950 - 1972	Complete file of correspondence relating to a scale model of the Nile Steamer, PS "Arabia", which was (and still is?) on permanent loan to the Southampton Museums Department. Documents relate to the

shipping of the model from America, attempts to loan it to various museums, and renovation carried out. Also information on the real steamer's history.

1957

Book of assorted press cuttings relating to the de-sequestration of Cook's Egyptian offices and the visit of Stanley Adarus to Egypt in '57.



Black Box 8 – Provisional Contents List (May 2000)

NB: Items in the box are filed in the following order:

- | | |
|-------------|--|
| 1869 – 1930 | Miscellaneous collection of articles relating to the history of Cook's involvements and businesses in Egypt. Also a Cook family tree and a copy of an 1872 private circular for members of a tour party to the Nile and Palestine. |
| 1885 – 1891 | Yellow folder of correspondence from JMC to his son, Bert, during Bert's time as anchor-man for Cook's in Cairo. 29 letters. Folder also contains a more detailed list (compiled by Edmund?) of the letters and their respective subjects. |
| 1888 – 1889 | Small packet of correspondence sent to John Mason Cook. Mostly concerning the Egypt business. |
| 1891 – 1893 | Correspondence between F Pagnon and John Mason Cook concerning business matters. Also letters to JMC from Kingsford and Royle. Sheet listing payments to Mr Pagnon for Egyptian Hotel Accommodation (old and new rates). |
| 1892 - 1894 | Bundle of miscellaneous correspondence. (in brown envelope). Includes a letter from JMC to Bert, telegrams from Pagnon, and a letter concerning Pagnon's financial affairs, with details of the status of his mortgage account. Also a letter from Frank regarding the Nile service. |
| 1892 – 1895 | Correspondence from Pagnon to JMC. Includes details of building work carried out at various Egyptian hotel sites, as well as of furnishings, sales, queries, etc. Also one letter from JMC to Kingsford concerning the Nile steamers. |
| 1893 | Small collection of letters relating to an order for a Nile dahabeah for personal use. It seems that Cook's undertook to have it built and fitted out. Includes plans of the ship. |
| 1893 | Bundle of correspondence including letters from Snow, Baghorn, and Wallace (?) at Boulac, |

	concerning affairs in Egypt. Also letter from Frank to Kingsford, 1893.
1893 – 1895	Brown folder of correspondence relating to the business in Egypt. Includes letters between JMC, Bert and Frank, as well as from Kingsford and Faulkner.
1893 – 1896	Tabular statement showing the number of passengers leaving Cairo on the Tourist Steamers as per telegrams from Cairo. Also a blank departures sheet.
1894	Copy of the agreement between Lord Cromer and John Mason Cook for the lease of a plot of land at Cairo for use as a Nile Steamer landing stage.
1938 – 1945	Brown card file of correspondence and administrative memos relating to the staff and affairs of the Baghdad office. Includes salary details and staff names.
 1966	List of the names of vessels in Cook's Nile Flotilla, with brief historical details of each. Compiled by J H Price. Also 3 photocopies of same.

GUARDBOOK No. 11**Egypt Original Photos**

- | | |
|---------------|--|
| c1890 | Cook's party at one of the Egyptian temple sites – four gentleman, one lady on a mule and two Egyptian escorts |
| c1900 | Cook's party at the Pyramids, Egypt – ladies and gentlemen and local escorts |
| ? | Tourists climbing a Pyramid |
| c1900 | Group of four gentleman dressed in suits on camels |
| ? | Captain on one of the Nile steamers |
| ? | Photo of two Cook's staff in uniform in front of an Egyptian temple |
| ? | Two mounted photos of a 'Serapis' Nile Cruise – one a group of three gentleman and the other the 'Serapis' |
| 1886 | Thomas Albert Cook with Abbas Pacha and Prince Mahomet Ali and suite taken in London |
| ? | 'Pulling in a Nile steamer' |
| * <u>1872</u> | Cook's first Egypt office in the grounds of Shepherd's Hotel – with a group of people in front |
| 1949 | Cairo office |
| 1906 | Cook's Party near Assouan – ladies and gentlemen on mules with Egyptian escorts |
| c1910 | Edwardian lady on a camel with Egyptian escort in front of the Step Pyramid |
| ? | The Head Mule (? The Holy Land) |
| c1900 | Postcards of Port Said and Cook's Landing Stage in Cairo |
| * c1905 | Three postcards of a John Varley painting 'Sunset on the Nile, from one of Cook's Tourist Steamers' |
| 1930 | Photo of a party from the S.S. Thebes on their way to the desert camp near the Second Cataract. Extract from a 1930-31 Season Egypt, The Nile and Palestine brochure in which the photo appears. |
| c1905 | Postcard of one of Cook's parties returning from Karnak |

Appendix B

c1880	Coloured postcard of a painting of the Luxor Hotel presented by Mrs. S. Nissan
* 1922	Seven photos of a January 1922 Egyptian journey donated by Mrs. Fahy during the 1984 Gordon Centenary Nile Trip
c1900	Five postcards donated by Mr. P.J. Mason – Cairo, Port Said & Karnak including Cook's Donkey Boys waiting at Karnak (not seen previously)
* c1930s	Five photos from glass plates
c1920s	Three photos donated by Mrs. S. Nicholson of a party on camels, a picnic at an Egyptian temple and in a car in front of the Pyramids
1922	A large party of Cook's tourists at Thebes (Luxor)
early 1930s	Three photos of the Hooper family in Egypt – originals with Miss Joy Hooper
1936	Lady tourist on a camel at the front of the Pyramids
* 1949	View of Cairo office building showing Shepheard's Hotel next door
1920	Shepheard's Hotel, Cairo showing the entrance and terrace with many people in the photo
c1900s	Seven postcards, some in colour, donated by John Price 1994. Luxor landing stages, Winter Palace Hotel, Savoy Hotel, Luxor, Gezireh Palace Hotel, Cairo, The Grand Hotel Assuan and Port Said
1937/1938	Two photos of Cook's Dragomans in Egypt
1938	Near Hclouan from a steamer
1935	Two photos of Cook's Rest House – Chalet Hatasu –near the terrace temple of Queen Hatasu in the Valley of the Kings, Thebes
?	Three photos of Cook's Rest House, Cairo – one with an Egyptian on a camel in the foreground
?1861	Francis Bedford photo of a view of the Pyramids with Egyptians in the foreground
?1857	Francis Frith photo of one of the Egyptian temples
?	Wheelhouse of an Egyptian temples
?1857	Francis Frith postcard and photo of Osiride Pillas and Great Fallen Colossus Egypt

- * ? Sixteen photos from glass slides of various Egyptian views
- c1920s Seven photos from a donation by Mr. Hodge from the Mediterranean Cruise Book – photo library, Greenwich Maritime Museum
- c1905 Photo of a postcard of Tunis – courtesy of Bill Tunstall
- c1900 Five photos of postcards of Cairo and Port Said – courtesy of Bill Tunstall
- 1960s Tourists in Egypt – in front of the Pyramids
- c1905 Photo from a glass plate of three Edwardian tourists on camels at the Pyramids
- 1991 Modern photos of an Egyptian trip presented by Judy Prickett (ex-member of Berkeley Street staff)
- ? Modern day negatives of Egypt – no further information provided
- 1947 Egyptian villagers on the wall of Asyut lock
- c1900s Four postcards of people in Egypt donated by John Price 1995
- ? Five postcards/photos of Egypt donated by John Price 1995
- c1910 Three gentlemen on camels in front of the Pyramids and Sphinx with an Egyptian guide – source of photo unknown – donated by Mary Scenters 1999
- c1910 Three different gentlemen on camels in front of the Pyramids and Sphinx with two Egyptian guides – source of photo unknown – donated by Mary Scenters 1999

Jill Lomer
May 2001

GUARDBOOK No. 12Egypt Steamer Photos

1961	List of Nile steamers compiled by John Price from the ship's ledger in Cairo office
c1906	<i>Amasis</i> on the Nile
Various dates	A selection of photos of the <i>Arabia</i> – one in front of the Winter Palace Hotel in 1938, another at the landing stage in Luxor. Two postcards from 1928 showing the <i>Arabia</i> approaching Aswan
1922	Cook's passengers embarking on to the <i>Arabia</i> at Cairo
1972	Photographs of a model of the P.S. <i>Arabia</i> presented to Southampton Maritime Museum
?	Photograph of the full complement of crew of the <i>Arabia</i>
?	Two photos of <i>Damietta</i> on the Nile
?	Three postcards and one photo of the <i>Damietta</i>
1913	Extract from <i>The Traveller's Gazette</i> Oct showing three different types of Nile steamer
?	Several photos of the <i>Egypt</i> on the Nile. Also internal view of the drawing room, a double bedroom (1933), a sitting room (1935) and a plan of the <i>Egypt</i>
1889	Probably a photo of the <i>Prince Mahomet Ali</i> - shows passengers and crew on board
?	Three photos of the private steamer <i>Memnon</i> on the Nile
?1925	Small photo of the <i>Messir</i>
c1900	Photo of the <i>Nefertari</i> on the Nile
?	Two photos of a small dahabcah the <i>Oonas</i>
?	Several photos of the <i>Rameses</i> at Luxor. Also a postcard
1906	Framed photo of <i>Rameses the Great</i> on the Nile donated by Mr. Brodhurst Nov 1994
?	Two more photos of <i>Rameses the Great</i> and three postcards
?	Three postcards of the <i>Rosetta</i> on the Nile

?	Small photo of the <i>Serapis</i> on the Nile
?	Two photos of the small private steamer the <i>Seti</i> for eight passengers
?	Two postcards of the <i>Sudan</i> . Two 1934 photos showing the <i>Sudan</i> moored at the Aswan Landing Stage. Five photos of the <i>Sudan</i> approaching Aswan 1931. Three photos on the Nile 1933 – one in front of the temple of Kom Ombo. Two photos from 1933 – one the <i>Sudan</i> is moored at Esna with the barrages in the background and the other at Assiut. Lots of activity with passengers on board and crew working on the dock
?	Photo of the <i>Tewfik</i> on the Nile
?	Several photos of the <i>Thebes</i> . Postcard from 1928. The <i>Thebes</i> moored at Baliana and at Assiout. Also another location in 1938. The <i>Thebes</i> at Aswan in front of the Old Cataract Hotel
1905	Cook's Nile Steamer on the Nile – unidentified
?	Photo entitled 'Down the Nile' showing boats moored alongside the bank
?	Four photos of the Anglo-American Co. steamers: <i>Puritan</i> , <i>Victoria</i> , <i>Britannia</i> and the <i>Niagara</i>
?	Egyptian State Railways ferry steamer
?	Two photos of a Stern wheeler (Egyptian Government) on the Nile
1933	Landing stage at Dendera. Landing stage at Assouan. Landing stage at Esna
1938	Two photos of centre decks on an unidentified Nile steamer
?	Photo of Gaddis Morgan, Cook's Senior Dragoman <i>s.s. Egypt</i>
1938	Photo of the backs of a Nile steamer crew
?	Nile Cruise Manager on unidentified boat
?	Another Nile Cruise Manager on unidentified boat
?	Two photos of dahabeahs – one donated by Mary Scenters 1999 (source unknown)
c1900s	Nile steamer boatmen pulling in a steamer
1947	Nile steamer boatmen scrubbing decks
1947	Nile steamer boatmen scrubbing crew quarters' decks
1947	'The Gong for Lunch' – head waiter on board Nile steamer
1947	Serving afternoon tea on deck – four waiters
?1947	Passengers and crew on deck of a Nile steamer

Appendix B

- 1933 Three views from the deck of a Nile steamer looking towards the banks of the Nile
- 1947 People on deck of a Nile steamer looking out towards the banks. A waiter lighting a lady passenger's cigarette
- ? Two photos of J.B. Priestley (?) on board the *Thebes*. No supporting evidence
- 1938 Three ladies watching the Nile scenery from the observation room of a Nile steamer
- ? Group of passengers and crew watching the banks from a Nile steamer
- c1930s Group of passengers on board the *Arabia*
- 1947 View from the deck of a Nile steamer – a man taking a photograph
- 1947 View from the deck of a Nile steamer with passengers, passing an Egyptian town
- 1947 Deck scene at Assyt – three men on board looking out at the landing stage
- 1948 Article from Cook's Staff Magazine May/June on Boulac – the ship building works in Cairo, owned by Thos. Cook & Son. A large selection of internal and external photos of the ship building and engineering works including the foundry, joiners' shop, riveters and blacksmiths' shops, whalers, dinghies and Fairmile launches under construction. People feature in many of the photos.

Jill Lomer
22 May 2001

GUARDBOOK No. 13**Egypt Steamer Documents**

- 1997 Article from *Time Traveller* on the history of The Nile Steamers with a list of when the Nile steamers were built
- 1879 Nile Business – contract with the Egyptian Government
 1879 Misc. correspondence re contract with Egyptian Government
 1879 Copies of correspondence re contract with Egyptian Government
- 1887 Contract 1887 Rostovitz Bey and Signor L. Loria re Dahabeahs (in Italian)
- 1880s/1890s Accounts re dahabeahs
- 1891 Correspondence re engineers for the Nile Fleet 1891
- 1893 Correspondence from Frank Cook to John Mason Cook re Cook's House Flag on the Nile
- 1880-81 & 1883-84 Handbills for *Steam Navigation on the Nile* for the two seasons
- 7 Steamer plans for *Egypt, Sudan & Arabia, Thebes, Damietta, Delta, Scarab, Seti, Fostat & Rosetta*
- 1904 Plan of Boulac
- 1926 Extract from *Engineering* entitled *Enlarging a Sternwheel Steamer for Nile Tourist Service* and an extract from *The Malayan Traveller's Gazette* – *Cook's Engineering Works in Egypt*
- 1875-1880 Passenger Lists for annual tours to Palestine, Egypt, Constantinople, Athens & Italy
- 1893 Passenger Lists and Booking Lists for Palestine and the Nile Steamers for October to December
- 1894 Passenger Lists and Booking Lists for Palestine and Nile Steamers for Jan to March
- 1890s Passengers Lists:
- | | |
|------------------------------|-------------|
| <i>P.S. Sethi</i> | 4 Feb 1891 |
| <i>P.S. Amenartas</i> | 5 Mar 1892 |
| <i>P.S. Mohammed Ali</i> | 8 Mar 1892 |
| <i>P.S. Tewfik</i> | 25 Feb 1892 |
| <i>P.S. Tewfik</i> | 6 Jan 1891 |
| <i>Special Steamer Sethi</i> | 30 Dec 1891 |
| <i>P.S. Rameses</i> | 1 Mar 1892 |

- 1892 List of Members on a Cook's Spring Tour to Egypt and Palestine from New York February 13 by Cie. Gen. Transatlantique Steamer *La Normandie*
- 1890 *Instructions to the Managers of Cook's Nile Steamers* booklet
 1892 *Instructions to the Managers of Cook's Nile Steamers* booklet
 1892 *Rules and Regulations for Commissaires on Cook's Mail Steamers* booklet
 1892 *Rules and Regulations for the Restaurateurs on Cook's Mail Steamers* booklet
 1892 *Rules and Regulations for Cook's Dahabeahs* booklet
- 1891 The results of a poetry competition on board the *Rameses the Great* to compose a poem on the tourists' impressions of Egypt (January)
- 1895 Letter warning Cooks about staff conduct on the Nile from 'A Resident'
- 1893 Steamer ticket with several black and white illustrations from Girgeh to Assouan in the name of Mr. Hauser
- ? Cook's Mail Steamer Service ticket for meals in the Upper Deck Saloon from Cairo to Girgeh
- ? Gladius Morgan's (a dragoman) farewell speech to a Cook's Nile Tourist party
- 1886 Three military steamer tickets printed in French
- 1927 Correspondence between F.H. Cook and Lady Willoughby de Broke re cruelty to donkeys in Egypt
- 1896 Miscellaneous customer complaints
- ? Passenger complaint re food
- 1897 Copies of two letters from Nile Passengers on board *Rameses III*
- 1891 Correspondence and article from *Truth* on the plucking of live chickens in Egypt
- ? Fourteen different designs of Cook's Nile Services (blank) Menus – showing a selection of traditional scenes from Egyptian life – sketch drawings
- ? Blank menus from the *s/w Arabia*, *ss Scarab*, *ss Oonas*, *ss Luxor*, *ss Hathor*, *s/w Soudan* and from the *Dahabeah Osiris* with Cook's Nile Service logo
- 1907 Full menu from the *Egypt* 7 Decmber
- 1907 Invitation to The Annual Staff Dinner, Messrs. Thos. Cook & Son (Egypt) Ltd Cairo on board the Nile Tourist Steamer *Egypt* – Cairo, 30 December
- 1909 Invitation to the Annual Dinner of the Staff of Thos. Cook & Son (Egypt) Ltd held on Company's Steamer *Egypt* at Kasr El-Nil, 27 December

- 1911 Cook's Nile Services Passenger List for the P.S. *Egypt* leaving Cairo
7 November
- 1911 Mr. Luhrs Junior's season ticket past to the Egyptian antiquities
1911 Itinerary for a tour of Italy and Egypt including the Nile Voyage
- ? Leaflet on the Hotel *S/S Arabia* – used as a hotel moored in Cairo
and a small paragraph on its history
- 1916 Article from *Thornycroft Monthly Circular* on the shallow draught passenger
steamers for the River Nile built to the order of Thos. Cook & Son (Egypt) Ltd
- 1946 Article from *Egypt Today* on Principal Industrial Enterprises – Thos. Cook &
Son Ltd
- 1915? Article on fire of Cairo which destroyed three of Cooks Steamers (?Rameses,
Rameses the Great, Tewfik)
- 1952 Letter to Mr. Cormack detailing the sale of the last of the Cook's Nile Fleet:
Delta, Memnon, Fostat, Thebes, Arabia, Sudan, Egypt

Jill Lomer
4 June 2001



GUARDBOOK No. 15

The W.R. Todd Collection (Egypt)

- | | |
|------|---|
| 1938 | Deck of Nile Steamer (Miss Wassel) |
| ? | People on the deck of a Nile Steamer |
| 1938 | People on the deck of a Nile Steamer (Miss Wassel) |
| ? | A man in silhouette taking a photograph from the deck of a Nile Steamer
- feluccas in the background |
| ? | Two more photos on a Nile steamer deck |
| 1938 | Cook's waiter serving tea on the deck of a Nile steamer (Miss Wassel) |
| ? | Tea time aboard the <i>Arabia</i> |
| 1938 | Deck of a Nile steamer – people looking out at the landing stage at
Assiout |
| ? | People on the deck of a Nile steamer |
| 1938 | Lady looking out from the deck of a Nile steamer – feluccas in the distance
(Miss Wassel) |
| ? | Cook's staff and passengers on a Nile steamer |
| ? | Cook's party in an Egyptian temple (possibly Karnak at Luxor) |
| ? | Great temples of Abu Simbel |
| ? | Cook's party in an Egyptian temple |
| 1938 | Inside an Egyptian temple (Miss Wassel) |
| ? | Cook's party with a dragoman looking at an Egyptian temple |
| ? | Cook's party at Memphis |
| ? | Two photographs of a Cook's Party in an Egyptian temple with a dragoman |
| ? | Two photographs of a Cook's party in the desert |
| ? | The <i>Egypt</i> showing all the crew and passengers |
| ? | A landing stage ? |

- 1938 Two photos of the boatmen – one accredited to Miss Wassel
- 1938 Two photos showing Cook's staff on board a Nile steamer – a group of four are serving afternoon tea
- 1938 Two photos of a Nile sunset (Miss Wassel)
- ? Two photos on board a Nile steamer – one of the head waiter banging the gong and another member of staff opening a door
- ? Two photos of Cook's staff scrubbing the decks on board a Nile steamer
- ? Two photos of feluccas on the Nile
- ? Two photos of life on the Nile – a water wheel and fisherman repairing a boat
- ? Two photos of Egyptian life
- ? Two photos of palm trees and animals
- ? Three photos – one of a village on the banks of the Nile and another of village life. Also a very small photo of the Mena House Hotel (Cairo)
- ? Two photos – one in the fields and one in a village
- 1930 Extract from *The Illustrated London News*, Nov 22 on *Egypt by Night, the Romance of Modern Travel on the Nile, and Majestic Monuments of Antiquity*
- ? Letter to the Todd family from Wahba their cook.
- ? Account from on board the *Comorin* – no more details
- * ? Account of an Egyptian trip – written on board the Dahabeah *Cheops* from M.M. Hawkins (Roxley, East End Road, Finchley N.3.)
- 1923 Extract from *The Traveller's Gazette* Jan entitled *The Discoveries in the Valley of the Tombs of the Kings*
- 1923 (Jan) Copies of 26 photographs from the opening of Tut-Ankh-Amen's tomb in the Valley of the Kings. Howard Carter and Lord Carnarvon are shown.
- 1923 (Dec) Article from *The Traveller's Gazette* entitled *New Discoveries in the tomb of Tutankhamen*

Jill Lomer
June 2001

GUARDBOOK No. 16**The Sudan Campaign 1884**

- Various introductions and histories of the campaign
- 1884 Two photos of sketches of the Gordon Relief Expedition
- ✂ 1885 Four copies of a booklet for private circulation only entitled *Mr. John M. Cook's Visit to the Soudan in connection with the Expedition of 1884-85*. This was an address delivered at the Royal Normal College for the Blind, Upper Norwood
- 1884 Resume of Gordon Relief Expedition
- 1882 A photograph of Sir Garnet Wolseley and his staff at Wadi Halfa after the 1882 Egyptian campaign. He was later C in C of the Gordon Relief Expedition
- 1882 Illustration from *The Graphic* showing the Khedive, Sir Garnet Wolseley and the Duke of Connaught in Cairo after the 1882 campaign. Cook's office on the right
- 1882 Illustration from *The Graphic* showing the Duke of Connaught and staff en route in Egypt
- 1883 General orders from Cairo Headquarters
- 1884 Two photos of Illustrated London News artist's impressions of the journey to Khartoum
- 1882 Illustration of a group on a Cook's dahabeah possibly a reception for the war correspondents
- 1884 Illustration of Cooks Relief Expedition – Cooks were entrusted by the Government with the transport of 18,000 troops and 130,000 tons of stores and material from Cairo to Wady Halfa
- 1885 Correspondence from Col. Ardagh to Thomas Cook 26.1.85 – 8.4.85 includes letter re arrival of Lady Wolseley 4.4.85
- 1885 Correspondence from Thomas Cook to Col. Ardagh and staff 4.85 – 8.85
- 1885 Correspondence from Col. Ardagh to Thomas Cook 20.4.85 – 9.8.85
- 1885 Hand-written contract between The Secretary of State for War and Messrs. Thomas Cook & Son for working steamers and vessels upon the Nile belonging to Her Majesty's Government

- 1885 Letters from Cook's man Dattari re coals needed to fuel Relief Expedition
- 1885 Miscellaneous correspondence, memoranda etc March to September
- 1885 Correspondence from Ministère de la Guerre etc to Thomas Cook April to September
- 1885-86 Telegrams 25.4.85 to 5.4.86
- 1886 Shipping receipts etc April
- 1886 Receipt for 'one Officer wife' Assiout to Assouan September
- 1887-90 Correspondence with War Office (Egypt) re claims, indemnity etc.
- 1897 Cooks Indemnity Action proposed on Egyptian Government: copies of receipts from War Office (Egypt)
- 1885 Suggestions from Col. Ardagh re arbitration of liability disagreement over steamer repairs etc
- 1884 Sketches from the *Illustrated London News* showing scenes from the Sudan Campaign from editions August 1884 to September 1887
- 1896 Times correspondence re Sudan advance and *Egyptian Gazette* cuttings (Dongola Expedition 1896)
- 1896 Note from Cairo to John Mason Cook thanking him for the Christmas cakes and puddings he sent to the soldiers
- 1984 Poster advertising Cooks *Gordon Centenary Nile Cruise* August 1984
- 1991 Letter from the Financial Times from Edmund Swinglehurst concerning historical facts

Jill Lomer
11 June 2001

GUARDBOOK No. 17Egypt Miscellany

- Chronologies of Cook's association with Egypt
- ? Cook and Son in Egypt (according to hieroglyphics found at Assouan)
- 1869 Two illustrations from the *Illustrated London News* of the Prince and Princess of Wales in Egypt
- 1894 The earliest surviving complete envelope with a Cook's Post Office (Cairo) cancellation 26 March 1894
- 1885 Postcard addressed to Messrs. Thos Cook & Son Cairo
- 1948 Thos. Cook & Son Ltd, Cairo printed envelope addressed to Mr. C.A.E Churchill c/o The Victoria Hotel, Cairo stamped with Cairo office and Post Office stamp
- 1978 Correspondence re the date of opening of Cook's Post Office at Cairo
- 1977 Information re Cooks/Cairo Post Offices
- 1964 Booklet in French *Les Cachets a Date des Bureaux de Poste des Hotels D'Egypte*
- 1891 Original illustration from the *Daily Graphic* showing the Khedive of Egypt opening the new native hospital at Luxor
- 1894 Extract from *Cook's Excursionist* on The Luxor Hospital
- 1891 Three copies of an account of the opening of the Luxor Hospital
- 1896 Report of the Luxor Hospital for Natives, Upper Egypt
- ? Letterheads from Shepheard's Hotel, Cairo, The Continental Savoy, Cairo and the Carlton Hotel, Bulkeley near Alexandria, Egypt
- 1891 Miscellaneous correspondence re the Luxor Hospital
- 1893 Correspondence re draft contracts etc for Nile doctors
- 1890 Dr. Milton's notes on hospital management in connection with the new hospital for natives at Luxor
- 1891 First Report on the Luxor Hospital for Natives 1891
- 1895-86 Photographs of Dr. T.W.M. Longmore, Dr. Mahommed and the male and female patients, staff and servants at the Luxor Hospital for Natives
- c1912 Extract from *Egypt & The Nile* brochure on the Luxor Hospital for Natives

- ? Memorandum of Agreement for the Nile Steamers Doctors' contracts
- ? Brochure for the Savoy Hotel, Luxor, Upper Egypt
- 1904 Postcard advertising G.G. Zacharia & Co, Booksellers and Photographers opposite Cook's Office, Cairo
- ? Orient Line Information Leaflet (including maps) for Suez Canal and Port Said
- 1883 & Receipts etc re 'The Chicken Men' – those who supply, fowls, pigeons, fruit
various dates etc to Cook establishments in Egypt – various dates
- 1895 & Material relating to Mr. C. Aquilina, late of Cooks of Cairo, and proprietor of
various dates the Bristol Hotel in Cairo – includes postcard of the Bristol Hotel
- various dates Brief history of The Old Shephard's Hotel, Cairo (1957), Christmas Menu
1932 from The Old Shephard's Hotel, Shephard's Hotel letterhead from
1891, extract from *The Traveller's Gazette* Nov 1914 and a press cutting
from *The Observer* dated 18 Aug 1957 on the opening of the new Shephard's
Hotel
- 1906 Article from *Cook's Traveller's Gazette* 11 December entitled *How to see the
countless attractions of the Nile* – includes a photo of a Cook's Nile Flotilla
framed picture – one of which is in the Archive collection
- 1921 Correspondence re purchase of the Helouan Electric Supply, Egypt
- 1891 Correspondence from Mrs. Ranger-Lawrence to Mr. J.M. Cook concerning
the establishment of a Soldiers' Institute in Cairo
- ? Booklet entitled *Souvenir of Alexandria*
- ? Book of 6 postcards entitled *Souvenir of Port Said*
- ? Extract of a letter re H. Gaze's practices in Egypt
- 1936-37 Tourist Statistical Information for 1936-37 and previous years including Cook
rivals in Egypt published by the *Tourist Development Association of Egypt*
- 1884 Coloured illustration from the Gordon Relief Expedition
- 1930s Fifteen black and white photos from Lady Chetwin's collection (no further
details)

Jill Lomer
13 June 2001

Appendix C Photographs Database

This database is the core depository for all the Nile boat photographs that the researcher gathered during the research timeline.

No	Name of the Archive	Web page	More Information
1	Abdelnasser Galal	NA	Personal Archive
2	AKG Images	https://www.akg-images.co.uk/CS.aspx?VP3=SearchResult&VBID=2UMESQ6GD9PR8&SMLS=1&RW=1280&RH=918#/SearchResult&VBID=2UMESQ6GD9YS9&SMLS=1&RW=1280&RH=918	
3	Akkasah, Center for Photography, New York University Abu Dhabi	http://akkasah.org/	
4	Alain Guillou Photography	http://www.guillou.com/sitev1/p1_cat/req.php?n025=Nile&submit=search+in+all	
5	Albert Kahn Collection	http://collections.albert-kahn.hauts-de-seine.fr/	
6	Albumen photographs of the 19th Century	http://www.annona.de/alben/index.html	
7	Alfred T Palmer Archive	http://palmer.webvanta.com/ports-of-call/11120-alfred-palmer-photographs-of-egypt	
8	ALINARI	https://www.alinari.it/	
9	American University in Cairo Digital Collection	http://digitalcollections.aucegypt.edu/cdm/landingpage/collection/p15795coll8	
10	Ancient Egypt and Archaeology Website	http://www.ancient-egypt.co.uk/old%20photos/	
11	Antique Photo World	http://www.antiquephotoworld.com/searchResults_sc.php?page=1&spec=18&img to display=25&sortby=recent&searchStrHdn=&searchCat=site&searchStr=Egypt&B3.x=0&B3.y=0&sortby=recent	
12	Arab Image Foundation	http://arabimagefoundation.com/	
13	ARCHNET	http://www.archnet.org/	
14	Arthur MacCallan Photographs	NA	Personal Archive
15	ARTSTOR	https://library.artstor.org	
16	Ashmolean Museum of Art and Archaeology	http://creswell.ashmolean.museum.php/am-makegall1.php?db=creswell&view=gall&neg=&coun=Egypt&city=&name=&func=&adaf=&adbe=&ahaf=&ahbe=&strt=1&what=Search&s1=mainid&s2=&s3=&dno=25	

17	Australian War Memorial	https://www.awm.gov.au/advanced-search?query=Nile+&collection=true&facet_type=Photograph&page=14	
18	Austria forum	https://austria-forum.org	
19	Barnum Archives	http://www.barnum-review.com	
20	Boston Museum of Fine Arts	https://collections.mfa.org	
21	British Museum	https://research.britishmuseum.org	
22	Brooklyn Museum	https://www.brooklynmuseum.org/opencollection/search?keyword=Nile&type=objects&limit=12&offset=12	
23	CALISHPERE – University of California Archive	https://calisphere.org/search/?q=Nile	
24	Cornell University	https://digital.library.cornell.edu/catalog/ss:544145	
25	Dig It	https://digit.wdr.de/search	
26	Digital Library for International Research	http://www.dlir.org/archive/orc-exhibit/items/browse/collection/5/page/1?search=Nile&submit_search=Search	
27	Digital National Library of Brazil	http://bndigital.bn.gov.br/acervodigital/	
28	Eastman Museum	1. https://collections.eastman.org/search/Nile/objects/list?page=1	
29	Egypt Exploration Society	https://www.flickr.com/photos/egyptexplorationsociety/albums	
30	Europeana Collections	https://www.europeana.eu/portal/en	
31	Facebook Groups:	2. https://www.facebook.com/Ahl.Misr.Zamaan/?ref=br_rs	
		https://www.facebook.com/maszaman202/?ref=br_rs	
		https://www.facebook.com/CairoZaman1/?ref=br_rs	
		https://www.facebook.com/MonarchyandDynasty/?ref=br_rs	
		https://www.facebook.com/alexandria1900/?ref=br_rs	
		https://www.facebook.com/alexandriacityofmemory/?ref=br_rs	
		https://www.facebook.com/groups/560511714026624/	
		https://www.facebook.com/-فوتوغرافيا-مصر-٢٢٦-٤١٧٠٢٩٢٥٣٦٨/	
32	Fine Arts Museums of San Francisco	http://art.famsf.org/	
33	Flickr Platform	https://www.flickr.com/	
34	Gallica - the digital library of the Bibliothèque nationale de France (BnF)	http://gallica.bnf.fr/accueil/?mode=desktop	
35	Getty Image	https://www.gettyimages.com	

Appendix C

36	Getty Institute	http://hdl.handle.net	
37	Granger Academic picture Archive	http://www.grangeracademic.com/results.asp?search=1&screenwidth=1366&tnresize=200&pixperpage=50&searchtxtkeys=Nile&istorients=132	
38	Griffith	http://www.griffith.ox.ac.uk	
39	Hallwyl Museum	http://emuseumplus.lsh.se	
40	Harvard Library	http://id.lib.harvard.edu	
41	HEIR – Historic Environment Image Resource	http://heir.arch.ox.ac.uk/pages/home.php	
42	Hennepin County Library Digital Collections	http://rightsstatements.org	
43	Henri Cartier-Bresson	https://www.henricartierbresson.org/en/	
44	Huntley Film Archives	https://www.huntleyarchives.com/results.asp?txtkeys1=nile	
45	Imperial War Museum	https://www.iwm.org.uk	
46	International Center of Photography	https://www.icp.org/search-results/Egypt/all/all/relevant/2	
47	iStock	https://www.istockphoto.com/au/photos/nile-boat?autocorrect=none&color=bw&excludenudity=true&family=creative&mediatype=photography&phrase=nile%20boat&sort=best	
48	Joan Lockyer	http://www.botrea.co.uk/joan/photos-egypt.html	
49	King's Own Royal Regiment Museum	http://www.kingsownmuseum.com/k03016-16.htm	
50	Library of Congress	https://www.loc.gov/photos/?q=Egypt	
51	LIFE collection	https://www.life.com/	
52	Luminous-Lint Photography History tool	http://www.luminous-lint.com/app/home/	
53	Marcel Maessen	NA	Personal Archive
54	Massachusetts Collection Online	https://www.digitalcommonwealth.org/collections/commonwealth:7d279x53d	
55	McClung Museum of Natural History and Culture, University of Tennessee Knoxville, Nineteenth and Early Twentieth Century Images of Egypt	https://digital.lib.utk.edu/collections/egyptcollection	
56	Medienarchiv	https://www.medienarchiv.com/0/thumbnail.php?album=search&cat=0&page=1	
57	Middle East Centre Archive	http://www.sant.ox.ac.uk/mec/mecaphotos-cross.html	
58	Minneapolis Institute of Art	https://new.artsmia.org/art-artists/curatorial-departments/photography-and-new-media	

59	Modern Memory of Egypt	http://modernegypt.bibalex.org/Collections/Home/default.aspx	
60	Mohamed Fawzy	NA	Personal Archive
61	Musee national de la Marine	http://mnm.webmuseo.com/ws/musee-national-marine/app/collection?vc=ePkH4LF7w6iejEyVYFWIqaESzlSTEGBUglofpuQDS7m81GIXXze0CtTIwgheHcP1EYwFALnrM9Q\$	
62	Musees D'Art et D'Histoire – Geneve	http://www.ville-ge.ch/musinfo/bd/mah/collections/result.php?criteria=&adv_auteur=&adv_denomination=Photographe&adv_titre=Nil&page=1	
63	Museum of Fine Arts Boston	https://collections.mfa.org/	
64	Museum of New Zealand	https://collections.tepapa.govt.nz/object/1389482	
65	Museum Victoria Collections	https://collections.museumvictoria.com.au/	
66	Národní muzeum - Náprstkovo museum	http://en.esbirky.cz/	
67	National Galleries Scotland	https://www.nationalgalleries.org/	
68	National Library of New Zealand	https://natlib.govt.nz/items?i%5Bcategory%5D=Images&page=1&text=Nile	
69	National Maritime Museum	https://collections.rmg.co.uk	
70	National Science and Media Museum	https://collection.sciencemuseumgroup.org.uk	
71	Norbert Schiller Archive	http://www.photorientalist.org/exhibitions/yankee-last-boat-to-sail-1000-miles-up-the-nile/photographs/	
72	Northwestern University	https://dc.library.northwestern.edu	
73	Online Archive of California	https://oac.cdlib.org/	
74	Past to Present: Photos from Egypt	http://www.past-to-present.com/showcountry.cfm?country=Egypt&fp=0	
75	Penn Libraries – Holy Land Digital Image Collection	http://dla.library.upenn.edu/dla/holyland/search.html?q=Nile	
76	Personal Collection of Magic Lantern Glass Slides		During 2019 I obtained several 19 th and early 20 th century Magic lantern glass slides, and this collection is only of photographs of Nile boats.
77	Pitt Rivers Museum	http://databases.prm.ox.ac.uk/fmi/web/Photos_PRM	
78	POP_la plateforme ouverte du patrimoine	https://www.pop.culture.gouv.fr	

Appendix C

79	Rare Historical Photos	https://rarehistoricalphotos.com/egypt-zangaki-brothers-1870-1890/	
80	Richard Hattatt Slide Collection	NA	SOTON Uni Collection
81	Rijkmuseum Studio	https://www.rijksmuseum.nl/en/search?q=Nile&f=1&p=1&ps=12&material=photographic%20paper&st=Objects&ii=0	
82	Roger Viollet	http://www.roger-viollet.fr/en/asset/fullTextSearch/search/Nile/page/1#nb-result	
83	Royal Collection Trust	https://www.royalcollection.org.uk/col/lection/search#/page/14#what	
84	San Francisco Museum	https://art.famsf.org	
85	Smithsonian Institution Research Information System	https://learninglab.si.edu	
86	Sonia Halliday Photo Library	http://www.soniahalliday.com/wordsearch.php	
87	State Library of South Australia	https://collections.slsa.sa.gov.au/resource/PRG+1485/2/page:4	
88	State Library Victoria	http://search.slv.vic.gov.au/primo_library/libweb/action/search.do?ct=Next+Page&pag=nxt&indx=1&pageNumberComingFrom=1&frbg=&rfrGrpCounter=1&indx=1&fn=search&dscnt=0&vl(1UIStartWith0)=contains&scp.scps=scope%3A(ROSETTA_OAI)%2Cscope%3A(SLV_VOYAGER)%2Cscope%3A(SLV_DIGITOL)%2Cscope%3A(SLVPRIMO)&vl(10247183UI0)=any&fctV=images&mode=Basic&vid=MAIN&ct=facet&rfrGrp=1&srt=rank&tab=default_tab&fctN=facet_rtype&dum=true&vl(freeText0)=Egypt&dstmp=1526045259697	
89	SURA	https://www.sura-project.be/	
90	t3.wy Projects	https://www.t3wy.nl/	
91	The Digital Collections of The National WWII Museum	https://www.ww2online.org/	
92	The Griffith Institute Archive	http://www.griffith.ox.ac.uk/archive/online/resources/index.html	
93	The Imperial War Museum Collection	https://www.iwm.org.uk/collections	
94	The J. Paul Getty Museum	http://www.getty.edu/art/collection/	
95	The Metropolitan Museum of Art	https://www.metmuseum.org/	
96	The Netherlands Institute for the Near East	http://www.nino-leiden.nl/collections/nino-collection-glass-slides-egypt	
97	The New York Public Library Digital Collection	https://digitalcollections.nypl.org/	

98	The Smithsonian Institution	http://collections.si.edu/search/results.htm?view=&dsort=&date.slider=&fq=online_media_type%3A%22Images%22&q=Nile+boat	
99	Thomas Cook Archive	NA	
100	TIMEA – Travelers in the Middle East Archive	http://timea.rice.edu/index.html	
101	Trove – National Library of Australia	https://trove.nla.gov.au/picture/result?q=Egypt	
102	Twitter Hashtag #MASRZAMAN	https://twitter.com/hashtag/MASRZAMAN?src=hash	
103	University of California	http://ucr.emuseum.com	
104	University of Chicago. Library. Special Collections Research Center	http://pi.lib.uchicago.edu/1001/dig/mepa/175Ar	
105	University of Pennsylvania Libraries, Holy Land Digital Image Collection	http://dla.library.upenn.edu/dla/holyland/index.html	
106	University of Wisconsin Milwaukee	https://collections.lib.uwm.edu/digital/search/	
107	V & A Collection	http://collections.vam.ac.uk/	
108	Views of an Antique Land	https://ww1imagesegypt.org.uk/	
109	Welcome Collection	https://welcomecollection.org	
110	Western Australia Libraries	http://luna.wustl.edu:8180/luna/servlet/view/search?search=Search&q=Nile&QuickSearchA=QuickSearchA&os=0	
111	Wiki Commons	https://commons.wikimedia.org/w/index.php?search=Nile&title=Special:MediaSearch&go=Go&type=image	
112	Zolotarev Archive	https://www.zolotarevarchives.com/egypt	

Arabic Romanization Table

All Arabic names were Romanized in accordance with guidelines approved by the Library of Congress and the American Library Association; tables compiled and edited by Randall K. Barry. ALA-LC Romanization Tables: Transliteration Schemes for Non-Roman Scripts. Washington: Cataloging Distribution Service, Library of Congress, 1991. The following Arabic Romanization table was updated in 2012.

Letters of the Alphabet

Initial	Medial	Final	Alone	Romanization
ا	ا	ا	ا	omit (see Note 1)
ب	ب	ب	ب	b
ت	ت	ت	ت	t
ث	ث	ث	ث	th
ج	ج	ج	ج	j
ح	ح	ح	ح	ḥ
خ	خ	خ	خ	kh
د	د	د	د	d
ذ	ذ	ذ	ذ	dh
ر	ر	ر	ر	r
ز	ز	ز	ز	z
س	س	س	س	s
ش	ش	ش	ش	sh

Arabic Romanization Table

ص	ص	ص	ص	ṣ
ض	ض	ض	ض	ḍ
ط	ط	ط	ط	ṭ
ظ	ظ	ظ	ظ	ẓ
ع	ع	ع	ع	‘ (ayn)
غ	غ	غ	غ	gh
ف	ف	ف	ف	f (see Note 2)
ق	ق	ق	ق	q (see Note 2)
ك	ك	ك	ك	k
ل	ل	ل	ل	l
م	م	م	م	m
ن	ن	ن	ن	n
ه	ه	ه ، ه	ه ، ه	h (see Note 3)
و	و	و	و	w
ي	ي	ي	ي	y

Vowels and Diphthongs

ā	a	ā	ā (see Rule 5)	ā	ā
aw	u	aw	á (see Rule 6(a))	aw	aw
ay	i	ay	ū	ay	ay

Letters Representing Non-Arabic Consonants

This list is not exhaustive. It should be noted that a letter in this group may have more than one phonetic value, depending on the country or area where it is used, and that the romanization will vary accordingly.

گ	g	چ	ch	ف	v
ڱ	ñ	چ	zh	ڦ	v
پ	p	ڙ	zh	ڻ	v

Notes

1. For the use of *alif* to support *hamzah*, see rule 2. For the romanization of *hamzah* by the consonantal sign ' (alif), see rule 8(a). For other orthographic uses of *alif* see rules 3-5.
2. The *Maghribī* variations ڦ and ڻ are romanized *f* and *q* respectively.
3. ّ in a word in the construct state is romanized *t*. See rule 7(b).

RULES OF APPLICATION

Arabic Letters Romanized in Different Ways Depending on Their Context

1. As indicated in the table, و and ڤ may represent:
 - (a) The consonants romanized *w* and *y*, respectively.

wad' وضع

'iwad' عوض

dalw دلو

Arabic Romanization Table

yad يد

ḥiyal حيل

ṭahy طهي

(b) The long vowels romanized *ū*, *ī*, and *ā* respectively.

ūlá أولى

ṣūrah صورة

dhū ذو

īmān إيمان

jīl جيل

fī في

kitāb كتاب

saḥāb سحب

jumān جمان

See also rules 11(a) and 11(b)(1-2).

(c) The diphthongs romanized *aw* and *ay*, respectively.

awj أوج

nawm نوم

law لو

aysar أيسر

shaykh شيخ

‘aynay عيني

See also rules 11(a)(2) and 11(b)(3).

2. | (*alif*), و and ى when used to support ء (*hamzah*) are not represented in romanization.

See rule 8(a).

3. | (*alif*) when used to support *waṣlah* (ء) and *maddah* (آ) is not represented in romanization. See rules 9 and 10.

4. | (*alif*) and و when used as orthographic signs without phonetic significance are not represented in romanization.

fa'alū	فعلوا
ulā'ika	أولائك
ūqīyah	أوقية

See also rule 12 and examples cited in rules 23-26.

5. | (*alif*) is used to represent the long vowel romanized *ā*, as indicated in the table.

fā'il	فاعل
riḍā	رضا

This *alif*, when medial, is sometimes omitted in Arabic; it is always indicated in romanization. See rule 19.

6. Final ى appears in the following special cases:

(a) As ى̣ (*alif maqṣūrah*) used in place of آ̣ to represent the long vowel romanized *ā*.

ḥattá	حتَّى
maḍá	مَضَى
kubrá	كَبْرَى
Yaḥyá	يَحْيَى

Arabic Romanization Table

musammá مَسْمَى

Muṣṭafá مَصْطَفَى

- (b) As *مَسْمَى* in nouns and adjectives of the form *fāʿīl* which are derived from defective roots. This ending is romanized *ī*, not *īy*, without regard to the presence of *◌◌◌* (*shaddah*). See rule 11(b)(2).

Raḍī al-Dīn رَضِيَ الدِّينِ

Compare the *fāʿīl* form of the same root الرَضَى [without *shaddah*] *al-Raḍī*.

- (c) As *مِصْرِي* in the relative adjective (*nisbah*). The ending, like (b) above, is romanized *ī*, not *īy*.

al-Miṣrī الْمِصْرِيّ

Compare الْمِصْرِيَّة *al-Miṣrīyah* and see rule 11(b)(1).

7. ö (*tā' marbūṭah*)

- (a) When the noun or adjective ending in *ö* is indefinite, or is preceded by the definite article, *ö* is romanized *h*. The *ö* in such positions is often replaced by *o*.

ṣalāh صَلَاة

al-Risālah al-bahīyah الرِّسَالَةُ الْبَهِيَّة

mir'āh مِرَاة

Urjūzah fī al-ṭibb أَرْجُوزَةٌ فِي الطَّبِّ

- (b) When the word ending in *ö* is in the construct state [muḍāf wa-muḍāf ilayh], *ö* is romanized *t*.

Wizārat al-Tarbiyah وَزَارَةُ التَّرْبِيَّة

Mir'āt al-zamān مِرَاةُ الزَّمَانِ

- (c) When the word ending in *ö* is used adverbially, *ö* (vocalized *ȫ*) is romanized *tan*. See rule 12(b).

Romanization of Arabic Orthographic Symbols Other than Letters and Vowel Signs

The signs listed below are frequently omitted from unvocalized Arabic writing and printing; their presence or absence must then be inferred. They are represented in romanization according to the following rules:

8. ء (*hamzah*)

(a) In initial position, whether at the beginning of a word, following a prefixed preposition or conjunction, or following the definite article, ء is not represented in romanization.

When medial or final, ء is romanized as ' (alif).

asad	أسد
uns	أنس
idhā	إذا
mas'alah	مسألة
mu'tamar	مؤتمر
dā'im	دائم
mala'a	ملاً
khaṭi'a	خطئ

(b) ء, when replaced by the sign ٱ (*waṣlah*) and then known as *hamzat al-waṣl*, is not represented in romanization. See rule 9 below.

9. ٱ (*waṣlah*), like initial ء, is not represented in romanization. See also rule 8(b) above.

When the *alif* which supports *waṣlah* belongs to the article ال, the initial vowel of the article is romanized *a*. See rule 17(b). In other words, beginning with *hamzat al-waṣl*, the initial vowel is romanized *i*.

Riḥlat Ibn Jubayr	رحلة ابن جبير
al-istidrāk	الإستدراك
kutub iqṭanat'hā	كتب أقتنتها

Arabic Romanization Table

bi-ihitimām ‘Abd al-Majīd باهتمام عبد المجيد

10. ~ (*maddah*)

(a) Initial Ī is romanized *ā*.

ālah آله

Kullīyat al-Ādāb كلية الآداب

(b) Medial Ī, when it represents the phonetic combination ‘ā, is so romanized.

ta’ālīf تأليف

ma’āthir مآثر

(c) ~ is otherwise not represented in romanization.

khulafā’ خلفاء

11. ّ (*shaddah* or *tashdīd*)

(a) Over و:

(1) وّ, representing the combination of long vowel plus consonant, is romanized *ū*
w.

adūw عدوّ

qūwah قُوّة

See also rule 1(b).

(2) وّ, representing the combination of diphthong plus consonant, is romanized
aww.

Shawwāl شَوَّال

ṣawwara صَوَّر

jaww جَوَّ

See also rule 1(c).

(b) Over ي:

- (1) Medial يَ , representing the combination of long vowel plus consonant, is romanized *īy*.

al-Miṣrīyah المِصْرِيَّة

See also rule 1(b).

- (2) Final يَ is romanized *ī*. See rules 6(b) and 6(c).

- (3) Medial and final يَ , representing the combination of diphthong plus consonant, is romanized *ayy*.

ayyām أَيَّام

sayyid سَيِّد

Quṣayy قِصَيِّ

See also rule 1(c).

- (c) Over other letters, و is represented in romanization by doubling the letter or digraph concerned.

al-Ghazzī الْغَزِّيِّ

al-Kashshāf الْكَشَّاف

12. *Tanwīn* may take the written form و , و (إِو), or و , romanized *un*, *an*, and *in*, respectively.

Tanwīn is normally disregarded in romanization, however. It is indicated in the following cases:

- (a) When it occurs in indefinite nouns derived from defective roots.

qāḍin قَاضٍ

ma‘nan مَعْنَى

- (b) When it indicates the adverbial use of a noun or adjective.

ṭab‘an طَبْعًا

faj‘atan فَجَاءَةً

al-Mushtarik waḍ‘an الْمَشْتَرِكُ وَضْعًا

wa-al-muftariq šuq'an والمفترق صقعا

Grammatical Structure as It Affects Romanization

13. Final inflections of verbs are retained in romanization, except in pause. represent

man waliya Mišr من ولي مصر

ma'rifat mā yajibu la-hum معرفة ما يجب لهم

šallā Allāh 'alayhi wa-sallam صلى الله عليه وسلم

al-Lu'lu' al-maknūn fi ḥukm اللؤلؤ المكنون فى حكم

al-ikhbār 'ammā sa-yakūn الإخبار عما سيكون

14. Final inflections of nouns and adjectives:

- (a) Vocalic endings are not represented in romanization, except preceding pronominal suffixes, and except when the text being romanized is in verse.

uṣūluhā al-nafsīyah wa-ṭuruq أصولها النفسية وطرق تدريسها

tadrīsihā

ilā yawminā hādhā الى يومنا هذا

- (b) *Tanwīn* is not represented in romanization, except as specified in rule 12.
(c) ö (*tā' marbūṭah*) is romanized h or t as specified in rule 7.
(d) For the romanization of the relative adjective (*nisbah*) see rule 6(c).

15. Pronouns, pronominal suffixes, and demonstratives:

- (a) Vocalic endings are retained in romanization.

anā wa-anta انا وانت

hādhihi al-ḥāl هذه الحال

mu'allafātuhu wa-shurūḥuhā مؤلفاته وشروحيها

- (b) At the close of a phrase or sentence, the ending is romanized in its pausal form.

ḥayātuhu wa-'aşruh حياته وعصره

Tawfīq al-Ḥakīm, afkāruh, آثاره، أفكاره، توفيق الحكيم

āthāruh

16. Prepositions and conjunctions:

(a) Final vowels of separable prepositions and conjunctions are retained in romanization.

anna	أن
annahu	أنه
bayna yadayhi	بين يديه

Note the special cases: مما *mimmā*, ممن *mimman*.

(b) Inseparable prepositions, conjunctions, and other prefixes are connected with what follows by a hyphen.

bi-hi	به
wa-ma'ahu	ومعه
lā-silkī	لاسلكي

17. The definite article:

(a) The romanized form *al* is connected with the following word by a hyphen.

al-kitāb al-thānī	الكتاب الثاني
al-ittiḥād	الإتحاد
al-aṣl	الأصل
al-āthār	الآثار

(b) When ال is initial in the word, and when it follows an inseparable preposition or conjunction, it is always romanized *al*/regardless of whether the preceding word, as romanized, ends in a vowel or a consonant.

ilá al-ān	الى الآن
Abū al-Wafā'	ابو الوفاء

Maktabat al-Nahḍah al-Miṣrīyah مكتبة النهضة المصرية

bi-al-tamām wa-al-kamāl بالتمام والكمال

Note the exceptional treatment of the preposition ل followed by the article:

lil-Shirbīnī للشرييني

See also rule 23.

- (c) The ل of the article is always romanized *l*, whether it is followed by a “sun letter” or not, i.e., regardless of whether or not it is assimilated in pronunciation to the initial consonant of the word to which it is attached.

al-ḥurūf al-abjadīyah الحروف الأبجدية

Abū al-Layth al-Samarqandī أبو الليث السمرقندي

Orthography of Arabic in Romanization

18. Capitalization:

- (a) Rules for the capitalization of English are followed, except that the definite article *al* is given in lower case in all positions.
(b) Diacritics are used with both upper and lower case letters.

al-Ījī الايجي

al-Ālūsī الألوسي

19. The macron or the acute accent, as appropriate, is used to indicate all long vowels, including those which in Arabic script are written defectively. The macron or the acute accent, as the case may be, is retained over final long vowels which are shortened in pronunciation before *hamzat al-waṣl*.

lbrāhīm إبراهيم ، إبراهيم

Dā'ūd داؤود ، داؤد

Abū al-Ḥasan ابو الحسن

ru'ūs رؤوس

dhālika ذلك

'alá al-'ayn على العين

20. The hyphen is used:

- (a) To connect the definite article *al/* with the word to which it is attached. See rule 17(a).
- (b) Between an inseparable prefix and what follows. See rules 16(b) and 17(b) above.
- (c) Between *bin* and the following element in personal names when they are written in Arabic as a single word. See rule 25.

21. The prime (') is used:

- (a) To separate two letters representing two distinct consonantal sounds, when the combination might otherwise be read as a digraph.

Ad'ham أدهم

akramat'hā أكرمها

- (b) To mark the use of a letter in its final form when it occurs in the middle of a word.

Qal'ah'jī جى قلعه

Shaykh'zādah شيخزاده

22. As in the case of romanization from other languages, foreign words which occur in an Arabic context and are written in Arabic letters are romanized according to the rules for romanizing Arabic.

Jārmānūs (*not* Germanos *nor* Germanus) جارمانوس

Lūrd Ghrānfil (*not* Lord Granville) لورد غرانفيل

Īsāghūjī (*not* Isagoge) ايساغوجي

For short vowels not indicated in the Arabic, the Arabic vowel nearest to the original pronunciation is supplied.

Gharsiyā Khayin (*not* García Jaén) غرسيا خين

Examples of Irregular Arabic Orthography

23. Note the romanization of الله, alone and in combination.

Allāh	الله
billāh	بِالله
lillāh	لله
bismillāh	بِسْمِ الله
al-Mustanṣir billāh	المستنصر بالله

24. Note the romanization of the following personal names:

Ṭāhā	طه
Yāsīn	يس ، يسن
‘Amr	عمرو
Bahjat	بهجت ، بهجة

25. ابن and بن are both romanized *ibn* in all positions.

Aḥmad ibn Muḥammad ibn Abī al-Rabī‘ احمد بن محمد بن ابي الربيع

Sharḥ Ibn ‘Aqīl ‘alá Alfīyat Ibn Mālik شرح ابن عقيل على الفية ابن مالك

Exception is made in the case of modern names, typically North African, in which the element بن is pronounced *bin*.

Bin Khiddah	بن خده
Bin-‘Abd Allāh	بنعبد الله

26. Note the anomalous spelling مائة, romanized *mi’ah*.

List of References

- Abū Sālim, M. (2009) *Dīwān wābwrāt al-būstah al-Khidīwīyah*. Cairo University.
- Agius, D.A. (2008) *Classic ships of Islam from Mesopotamia to the Indian Ocean, Handbook of Oriental Studies. Section 1, The Near and Middle East*. Brill Academic Publishers.
- al-Ḥittah, A. (1967) *Tārīkh Miṣr al-iqtisādī al-qarn al-tāsi' 'ashar*. Maktabat al-Nahḍah al-Miṣrīyah.
- al-'Abbādī, M. (1999) *al-Imbrāṭūrīyah al-Rūmānīyah al-niḏām al-imbirāṭūrī wa-Miṣr al-Rūmānīyah*. Alexandria: Dār al-Ma'rifah al-Jāmi'īyah.
- Ali, A. (2014) *Al-Monshaat Al-Mi'amariah fi 'Asr Al-Khedewi Isma'il*. Cairo: Maktabit Madbouly.
- al-Jabartī, A. al-R. (1997) *'Ajā'ib al-āthār fil-tarājim wal-akhbār*. Cairo: Maṭba'at Dār al-Kutub al-Miṣrīyah.
- al-Manāwī, M. Ḥamdī (1966) *Nahr al-Nīl fī al-maktabah al-'Arabīyah*. Cairo: al-Dār al-Qawmīyah lil-Ṭibā'ah wa-al-Nashr.
- al-Mayrī, K. (2007) *Tārīkh al-baḥrīyah al-Tijārīyah al-Miṣrīyah 1854 - 1879*. Cairo: Al-Hay'a Al-Masrya Al-'ama Lelkitab.
- al-Nakhīlī, D. (1979) *al-Sufun al-Islāmīyah 'alá ḥurūf al-mu'jam*. Alexandria: Alexandria University Press.
- Al-Shafei Bek, A. (1950) *A'amal Al-Manafe' Al-'Amah Al-Koubra fi 'Ahd Mohamed Ali Al-Kabir*. Cairo: Dar Al-Ma'arif.
- Amin, G. (2012) *Qiṣṣat al-iqtisād al-Miṣrī min 'ahd Muḥammad 'Alī ilá 'ahd Mubārak*. Cairo: Dār al-Shurūq.
- Anderson, M. (2012) 'The development of British tourism in Egypt, 1815 to 1850', *Journal of Tourism History*, 4(3), pp. 259–279. Available at: <https://doi.org/10.1080/1755182X.2012.711373>.
- Armstrong, J. and Williams, D.M. (2011) 'The Beginnings of a New Technology: The Constructors of Early Steamboats 1812–22', *The International Journal for the History of Engineering & Technology*, 81(1), pp. 1–21. Available at: <https://doi.org/10.1179/175812110x12869022260033>.
- Baldwin, G. (1801) *Political recollections relative to Egypt*. LONDON: H. Baldwin and Son. Available at: <https://archive.org/details/b22036659> (Accessed: 5 March 2018).

List of References

Bartlett, W.H. (1850) *The Nile Boat: or, Glimpses of the Land of Egypt*. Second Edi. London: Arthur Hall, Virtu, and Co. Available at:

<https://archive.org/stream/nileboatorglimps00bartrich#page/n7/mode/2up>.

Bauden, F. (2015) 'Le Transport de marchandises et de personnes sur le Nil en 823 A.H./1420 È.C.', *Documents and the History of the Early Islamic World*, 111, pp. 100–129. Available at:

https://doi.org/10.1163/9789004284340_008.

Bell, B. (1975) 'Climate and the History of Egypt: The Middle Kingdom', *American Journal of Archaeology*, 79(3), pp. 223–269. Available at: <https://doi.org/10.2307/503481>.

Benn, Carl. (2009) 'Mohawks on the Nile : natives among the Canadian Voyageurs in Egypt, 1884-1885', p. 278.

Breene, M. (2021) 'From Jonah to Jack Tar: the integration of whaleboats into the British Royal Navy', *Archaeonautica*, (21), pp. 65–69. Available at:

<https://doi.org/10.4000/archaeonautica.1175>.

Breene, M.L. (2018) 'Outfitting the country boats as gunboats: indigenous vessels and the Egyptian campaign, 1798–1802', *Journal for Maritime Research*, 20(1–2), pp. 105–117. Available at: <https://doi.org/10.1080/21533369.2018.1528718>.

Brown, K. (2014) 'Egyptian Voyages : Gustave Flaubert , Maxime Du Egyptian Voyages : Gustave Flaubert , Maxime Du Camp , and Fouad Elkoury', *History of Photography*, 38(2), pp. 161–172. Available at: <https://doi.org/10.1080/03087298.2014.890391>.

Bruce, J. (1790) *Travels to Discover the Source of the Nile in the Years 1768, 1769, 1770, 1771, 1772, and 1773*. Edinburgh: J. Ruthven. Available at:

<https://archive.org/details/travelstodiscove003bruc>.

Bunson, M. (2009) *Encyclopedia of Ancient Egypt*. Inforbase Publishing. Available at:

<https://books.google.co.uk/books?hl=en&lr=&id=-6EJOG-4jyoC&oi=fnd&pg=PR5&dq=Encyclopedia+of+Ancient+Egypt&ots=QR5R8Bpl0d&sig=RDLxPPfHXOhjjSrCgLeleZQr0xA> (Accessed: 13 May 2018).

Butler, W. (1887) *The Campaign of the Cataracts: Being a Personal Narrative of the Great Nile Expedition of 1884-5*. Available at:

https://books.google.com/books?hl=en&lr=&id=VEtCAAAAIAAJ&oi=fnd&pg=PA1&dq=the+campai+gn+of+the+cataracts&ots=j63QUcAWtq&sig=NnpBQ7qP6F_xf-AeuIR90Jot8Yg (Accessed: 21 September 2022).

- Butzer, K. (1976) 'Early hydraulic civilization in Egypta study in cultural ecology'. Available at: <http://www.sidalc.net/cgi-bin/wxis.exe/?IsisScript=sibe01.xis&method=post&formato=2&cantidad=1&expresion=mfn=009858> (Accessed: 13 May 2018).
- Cameron, D.A. (1898) *Egypt in the Nineteenth Century*. London: Smith, Elder and Company. Available at: <https://archive.org/details/egyptinnineteen01camegoog>.
- CAPMS (2022) *Annual Bulletin: Statistics of Goods & Passengers Transport in River Transport Sector*. Cairo. Available at: https://www.capmas.gov.eg/Pages/Publications.aspx?page_id=5104&YearID=23492 (Accessed: 18 January 2024).
- Carey, M. (1863) *Four Months in a Dahabeeh*. London: L. Booth. Available at: <https://archive.org/details/fourmonthsendaha00careuoft>.
- Carson, B.M. (1909) *Carson From Cairo to the Cataract*. Boston: L C Page & co. Available at: <https://archive.org/details/fromcairotocatar00carsiala>.
- Clarke, S. (1920) 'Nile Boats and Other Matters', *Ancient Egypt : British School of Archaeology in Egypt*. [Preprint], (Part 1). Available at: <https://archive.org/details/ancientegy1920to23brituoft> (Accessed: 4 September 2021).
- Clot-Bey, A.B. (1840) *Aperçu général sur l'Égypte*. Brucelles: Meline, Cans Et Compagnie. Available at: <https://archive.org/details/aperugnral02clot>.
- Colin, G. (1920a) 'Notes de dialectologie arabe (§ II): Technologie de la batellerie du Nil', *Bulletin de l'Institut Français d'Archéologie Orientale*, 20, pp. 45–87.
- Colin, G. (1920b) 'Notes de dialectologie arabe (§ II): Technologie de la batellerie du Nil (Fin)', *Bulletin de l'Institut Français d'Archéologie Orientale*, 20, pp. 201–222.
- Cooper, J.P. (2012) 'Fear god; Fear the bogaze: The Nile mouths and the navigational landscape of the medieval Nile Delta, Egypt', *Al-Masaq: Journal of the Medieval Mediterranean*, 24(1), pp. 53–73. Available at: <https://doi.org/10.1080/09503110.2012.655584>.
- Cromer, E.B. (1908) *Modern Egypt*. London: Macmillan and Co. Available at: <https://archive.org/details/modernegypt01cromuoft>.
- Daly, M.W. (2008) *The Cambridge history of Egypt. Volume 2, Modern Egypt, from 1517 to the end of the twentieth century*. Cambridge: Cambridge university press. Available at:

List of References

https://books.google.co.uk/books?id=clmLI_Oo_LsC&lr&source=gbs_book_other_versions

(Accessed: 2 May 2018).

Delis, A. (2012) 'Mediterranean Wooden Shipbuilding in the nineteenth century: Production, Productivity and Ship Types in Comparative Perspective', *Cahiers de la Méditerranée*, (84), pp. 349–366. Available at: <https://doi.org/10.4000/cdlm.6544>.

Delta, N.N., Fattah, T.A. El and Frihy, O.E. (1988) 'Magnetic Indications of the Position of the Mouth of the Old Canopic Branch on the', *Source: Journal of Coastal Research*, 4(3), pp. 483–488.

Driault, E. (1925) *Mohamed Aly et Napoléon (1807-1814) Correspondance des Consuls de France en Egypte*. Cairo: Impr. de l'Institut française d'archéologie orientale pour la Société royale de géographie d'Egypte. Available at: <https://archive.org/details/Driault-1925> (Accessed: 5 March 2018).

Edwards, A.B. (1890) *A Thousand Miles up The Nile*. New York: A. L. Burt, Publisher. Available at: <https://archive.org/details/thousandmilesupn00amel>.

El-Asmar, H.M. and Hereher, M.E. (2011) 'Change detection of the coastal zone east of the Nile Delta using remote sensing', *Environmental Earth Sciences*, 62(4), pp. 769–777. Available at: <https://doi.org/10.1007/S12665-010-0564-9/FIGURES/5>.

El-Nakib, I. (2011) 'Examining the Status of Egypt's River Transport System', *Applied Scientific Research*, 48, pp. 112–123.

El-Nakib, I., Roberts, C. and Colquhoun, G. (2009) 'Can Egypt Enhance Freight Logistics with COMESA', in. Available at: <https://doi.org/10.13140/RG.2.1.4052.9764>.

El-Sersawy, H. and Ahmed, A.F. (2005) 'INLAND WATERWAYS DESIGN CRITERIA AND ITS APPLICATIONS IN EGYPT'. Available at: http://iwtc.info/2005_pdf/13-2.pdf (Accessed: 1 May 2018).

Fabre, David. (2004) *Seafaring in ancient Egypt*. Periplus.

Fairholt, F.W. (1862) *Up The Nile and Home Again*. London: Chapman and Hall. Available at: <https://archive.org/details/upnilehomeagainh00fair>.

Fares Yehia, E. (2020) *The Politicisation of Early Egyptian Tourism*. Available at: <https://jaauth.journals.ekb.eg/>.

Faulkner, R. (1964) *A concise dictionary of Middle Egyptian*. The Griffith Institute. Available at: <https://ixtheo.de/Record/1110335334> (Accessed: 4 September 2021).

- Folkard, H. (1870) *The sailing boat: a treatise on English and Foreign boats and small yachts, Descriptive also of the various Forms and Peculiarities of Sails, Rig etc. of the Vessels of Every Nation; with practical Directions for Sailing and Management*. Fourth Edi. London: Longmans, Green, and Co.
- Folkard, H. (1901) *The sailing boat, a treatise on sailing boats and small yachts, their varieties of type, sails, rig, etc. With practical directions for sailing and management; also, the one-design and restricted classes, fishing and shooting boats, sailing chariots and i*. Fifth Edit. London: Edward Stanford. Available at: <https://archive.org/details/sailingboattreat00folk>.
- Folkard, Henry Coleman (1863) 'The sailing boat: a treatise on English and foreign boats , descriptive of the various forms of boats and sails of every nation ; with practical directions for sailing, management, &c.' London: Longman, Green, Longman, and Roberts, pp. ix, 317 p. Available at: <file://catalog.hathitrust.org/Record/011566899>.
- Folkard, Henry Coleman, (1863) *The sailing boat :a treatise on English and foreign boats , descriptive of the various forms of boats and sails of every nation ; with practical directions for sailing, management,.* 3d ed. London : Available at: <http://hdl.handle.net/2027/hvd.hw3e4k> (Accessed: 2 May 2018).
- Frith, Francis., Van Haaften, Julia. and White, J.Manchip. (1980) 'Egypt and the Holy Land in historic photographs : 77 views', p. 77. Available at: https://books.google.com/books/about/Egypt_and_the_Holy_Land_in_Historic_Phot.html?id=GzFyAAAAMAAJ (Accessed: 19 January 2024).
- Geraci, J. (2003) 'Lehnert & Landrock of North Africa', *History of Photography*, 27(3), pp. 294–298. Available at: <https://doi.org/10.1080/03087298.2003.10441256>.
- Ghazaleh, P. (2013) 'Trading in power: Merchants and the state in 19th-century Egypt', *International Journal of Middle East Studies*, 45(1), pp. 71–91. Available at: <https://doi.org/10.1017/S0020743812001262>.
- Gordon, L.D. (1902) *Lady Duff Gordon 's Letters from Egypt*. New York: McClure, Phillips & Co. Available at: <https://archive.org/details/lettersfromegypt00duff>.
- Gray, M. (1998) 'Economic reform, privatization and tourism in Egypt', *Middle Eastern Studies*, 34(2), pp. 91–112. Available at: <https://doi.org/10.1080/00263209808701224>.
- Greenhill, B. (2001) *A dictionary of the world's watercraft: from aak to zumbra*. London: Chatham Publishing.

List of References

Hassan, F.A. (1997) 'The dynamics of a riverine civilization: A geoarchaeological perspective on the Nile valley, Egypt', *World Archaeology*, 29(1), pp. 51–74. Available at:

<https://doi.org/10.1080/00438243.1997.9980363>.

Hazbun, W. (2006) 'The East as an Exhibit: Thomas Cook & Son and the Origins of the International Tourism Economy in Egypt', in P. Scranton and J. Davidson (eds) *The Business of Tourism: Place, faith, and History*. Philadelphia: University of Pennsylvania Press, pp. 3–33.

Available at:

https://www.academia.edu/4862517/The_East_as_an_Exhibit_Thomas_Cook_and_Son_a
(Accessed: 16 January 2024).

Hazbun, W. (2016) 'Travel to Egypt. From the Nineteenth Century to the Second World War: Thomas Cook, the Mechanization of Travel, and the Emergence of the American Era', *academia.edu*, pp. 124–131. Available at:

https://www.academia.edu/download/50096815/Hazbun_Red_Star_Line_Travel_to_Egypt.pdf
(Accessed: 7 September 2022).

Hollander, N. and Mertes, H. (1984) *The last sailors : the final days of working sail*. London: Angus & Robertson in association with Channel Four Television. Available at:

https://archive.org/details/lastsailorsfinal0000holl_p9d6 (Accessed: 17 January 2024).

Hornell, J. (1942) *THE FRAMELESS BOATS OF THE MIDDLE NILE, Source: Sudan Notes and Records*.

Hornell, J. (1970) *Water Transport: Origins and Early Evolution*. Newton Abbot: David & Charles.

Houghton, J. (2019) 'The Egyptian Navy of Muhammad Ali Pasha', *Mariners Mirror*, 105(2), pp. 162–182. Available at: <https://doi.org/10.1080/00253359.2019.1589113>.

El Houssi, A. (2005) 'Retour sur l'étymologie de "Felouque"', *Bulletin de la SELEFA*. Edited by SELEFA, 6(2), pp. 15–21. Available at: <https://doi.org/10.2/JQUERY.MIN.JS>.

Humphreys, A. (2015) *On the Nile : in the golden age of travel*. Cairo: The American University in Cairo Press.

'ilm al-Dīn, F. (1989) *Taṭawwur al-naql wa-al-Muwāṣalāt al-dākhilīyah fī 'ahd al-iḥtilāl al-Barīṭānī 1882 - 1913*. Cairo: Al-Hay'a Al-Masrya Al-'ama Lelkitab.

'Irāqī, M.I. (2002) *Qiṭā' al-naql fī Miṣr : al-māḍī wa-al-ḥāḍir wa-al-mustaqbal ḥattā 'ām 2020*. Giza: Al-Maktaba Al-Akadyah. Available at:

<https://books.google.co.uk/books?id=1cUmDwAAQBAJ&pg=PT151&lpg=PT151&dq=الملاحة+الداخلية+بمصر&source=bl&ots=EAUMh1ovMw&sig=no3Un9mVkeBOqbbIfjI3t4RMYm4&hl=en&sa=X&ved>

=0ahUKEwjKiObtnb_aAhXpL8AKHag0BFI4ChDoAQgoMAA#v=onepage&q=الملاحة الداخلية بمصر&f=false (Accessed: 1 May 2018).

Issawi, C. (1954) *Egypt at mid-century : an economic survey*. London : O.U.P. for the Royal Institute of International Affairs, 1954. Available at:

<http://search.ebscohost.com/login.aspx?direct=true&db=cat02326a&AN=usl.119650&site=eds-live>.

Japan International Cooperation Agency (2012) *MiNTS – MISR NATIONAL TRANSPORT STUDY THE COMPREHENSIVE STUDY ON THE MASTER PLAN FOR NATIONWIDE TRANSPORT SYSTEM IN THE ARAB REPUBLIC OF EGYPT FINAL REPORT TRANSPORT PLANNING AUTHORITY MINISTRY OF TRANSPORT THE ARAB REPUBLIC OF EGYPT*. Cairo. Available at:

http://open_jicareport.jica.go.jp/pdf/12065926_01.pdf (Accessed: 1 May 2018).

Johnstone, L. and Ratanavaraha, V. (2017) 'Green Freight Movement: The Dilemma of the Shifting of Road Freight to Alternatives', *Transportation Research Procedia*, 21, pp. 154–168. Available at: <https://doi.org/10.1016/J.TRPRO.2017.03.085>.

Jomard, E.F. (1809) *Description de l'Égypte : ou, Recueil des observations et des recherches qui ont été faites en Égypte pendant l'expédition de l'armée française / publié par les ordres de Sa Majeste l'empereur Napoleon le Grand (Band 4,1,1: Texte 1): Etat moderne*. Paris: Imprimerie Impériale.

Kelly, R.T. (1906) *Egypt painted and described*. London: Adam & Charles Black. Available at: <https://archive.org/details/egyptpainteddesc00kell>.

Kelly, R.T. (1920) *Peeps At Many Lands: Egypt*. London: A.& C. Black, LTD. Available at: <https://archive.org/details/peepsatmanylands18647gut>.

Khānkī, J. (1948) *Tārīkh al-baḥrīyah al-Miṣrīyah*. Cairo: Maṭba'at Dār al-Kutub al-Miṣrīyah.

Kindermann, H. (1934) *Schiff im Arabischen : Untersuchung über Vorkommen und Bedeutung der Termini*.

Koehler, J. (2015) 'Capturing the Light of the Nile', *Aramco World*, 66(6). Available at:

<http://www.aramcoworld.com/CMSPages/GetAzureFile.aspx?path=~%5Caramcoworldsite%5Cfiles%5C6c%5C6c9c715b-5cc1-488e-9b9b-63083ea8b3f7.pdf&hash=161ffd8de451aeda9d5354151be5570b5626eeb5cfc73697e3299940e8e900ca> (Accessed: 8 May 2018).

List of References

Koutkat, M. *et al.* (2017) 'The Vernacular Boats Of Egypt's Natural Lakes: Documentation Of Living Maritime Heritage', *Journal of Ancient Egyptian Interconnections*, 16, pp. 25–67. Available at: <http://jaei.library.arizona.edu>.

Lane, E.W. (2000) *Description of Egypt*. Edited by J. Thompson. Cairo: The American University in Cairo Press.

Lane, W.E. (1842) *An account of the manners and customs of the modern Egyptians, written in Egypt during the years 1833-1835*. London: Ward, Lock and Co. Available at: <https://archive.org/details/accountofmanners00laneuoft> (Accessed: 16 January 2025).

Laporte, L. (1872) *Sailing on the Nile. Translated by Virginia Vaughan*. Boston: Roberts Brothers. Available at: <https://archive.org/details/sailingonnile00lapouoft>.

Lipke, P.S.P. and F.B.A. (1993) *Boats, A manual for their documentation*. Nashville, Tennessee: American Association for State and Local History.

Lunn, R. (2005) 'Francis Frith's Egypt and the Holy land : the pioneering photographic expeditions to the Middle East', p. 234.

Lynch, J. (1890) *Egyptian sketches*. London: Edward Arnold. Available at: <https://archive.org/details/egyptiansketches00lyncgoog>.

Lyons, C.L. and J. Paul Getty Museum. (2005) *Antiquity and photography: early views of ancient Mediterranean sites*. Los Angeles: The J. Paul Getty Museum. Available at: http://www.worldcat.org/title/antiquity-photography-early-views-of-ancient-mediterranean-sites/oclc/58455454&referer=brief_results (Accessed: 9 May 2018).

MacLaren, Roy. (1978) *Canadians on the Nile, 1882-1898 : being the adventures of the voyageurs on the Khartoum Relief Expedition and other exploits*. Vancouver: University of British Columbia Press.

Manning, S. (1891) *India Illustrated with Pen and Pencil*. New York: Hurst & company. Available at: <https://archive.org/details/egyptillustrated00mann>.

Marsot, 'Afaf (2004) *Masr fi 'Ahd Mohamed Ali*. Cairo: Al-Maglis Al-A'ala Lelthaqafa.

Maşlahat al-Misāḥah (1933) *AlMANAC*. Cairo. Available at: https://books.google.com.eg/books/about/Almanac.html?id=eADIfaDhQUIC&redir_esc=y (Accessed: 17 January 2024).

- Mays, L.W. (2008) 'A very brief history of hydraulic technology during antiquity', *Environmental Fluid Mechanics*, 8(5–6), pp. 471–484. Available at: <https://doi.org/10.1007/s10652-008-9095-2>.
- McGrail, Sean. (2004) *Boats of the world : from the Stone Age to medieval times*. Oxford University Press. Available at: https://books.google.co.uk/books/about/Boats_of_the_World.html?id=C8GLGNrxxQMC&redir_esc=y (Accessed: 13 May 2018).
- Mikhail, A. (2011) *Nature and Empire in Ottoman Egypt: An Environmental History*. Cambridge: Cambridge University Press.
- Mohammed Mostafa, M. *et al.* (2022) 'Sensitivity Analysis of Inland Water Transport Systems in Egypt', *Port-Said Engineering Research Journal*, 0(0), pp. 0–0. Available at: <https://doi.org/10.21608/PSERJ.2022.140454.1186>.
- Moore, A.H. (1970) 'Last days of mast & sail: an essay in nautical comparative anatomy', p. 260.
- Morsy, Z. (2016) *Traditional Sailing Boats of Egypt: A Maritime Ethnographic Research of the 19th and 20th century boats*. Alexandria University. Available at: https://www.academia.edu/30764615/Traditional_Sailing_Boats_of_Egypt_A_Maritime_Ethnographic_Research_of_the_19th_and_20th_century_boats (Accessed: 13 May 2018).
- Mubāshir, 'Abduh (1995) *al-Baḥrīyah al-Miṣrīyah min Muḥammad 'Alī ilá al-Sādāt, 1800-1973*. Cairo: al-Hay'ah al-Miṣrīyah al-'Āmmah lil-Kitāb.
- Murray, C.A. (1898) *A Short Memoir of Mohammed Ali*. London: Bernard Quaritch. Available at: <https://archive.org/details/ashortmemoirmoh00murrgoog>.
- Murray, J. (1873) *A handbook for travellers in Egypt: including descriptions of the course of the Nile through Egypt and Nubia, Alexandria, Cairo, the pyramids and Thebes, the Suez Canal...* London: John Murray.
- Nicholson, P.T. and Mills, S. (2017) 'Soldier tourism in First World War Egypt and Palestine: The evidence of photography', *Journal of Tourism History*, 9(2–3), pp. 205–222. Available at: <https://doi.org/10.1080/1755182X.2017.1410582>.
- Nickel, D.R.. and Frith, Francis. (2004) 'Francis Frith in Egypt and Palestine : a Victorian photographer abroad', p. 239.

List of References

Nūrī, R. Ḥasan (2017) 'Marākib albrāny wa-'amalīyāt naql al-ghilāl li-madīnat al-Iskandarīyah fī 'aṣr Muḥammad 'Alī', *Miṣr al-ḥadīthah*, 16(16), pp. 119–144. Available at:

<https://doi.org/10.21608/NMISR.2017.153588>.

Olson, K.R. *et al.* (2024) 'Review and Analysis of Africa's Lifelines: The Nile River and the Aswan High Dam', *Open Journal of Soil Science*, 14(12), pp. 741–764. Available at:

<https://doi.org/10.4236/OJSS.2024.1412036>.

Overton, D.J. (1971) *Some Aspects of Induced Development in Egypt Under Muhammad Ali Pasha and Khedive Ismail*. Simon Fraser University.

Paton, A.A. (1863) *A History of the Egyptian Revolution from the Period of the Mamelukes to the Death of Mohammed Ali*. London: Trubner and Co. Available at:

<https://archive.org/details/in.ernet.dli.2015.81319>.

Pococke, R. (1743) *A Description of the East and Some Other Countries*. London: W. Bowver.

Available at: https://archive.org/details/gri_33125009339603.

Pomey, P. (2015) 'La batellerie égyptienne', in, p. 782111.

Richardson, R. (1822) *Travels along the Mediterranean and parts adjacent; in company with the Earl of Belmore, during the years 1816-17-18*. London: W. Blackwood. Available at:

<https://archive.org/details/travelsalongmed00richgoog>.

Rifaud, J.-J. (1830) *Tableau de l'Égypte, de la Nubie et des lieux circonvoisins; ou itinéraire a l'usage des voyageurs qui visitent ces contrées*. Paris: Treuttel et Wurtz.

Sa'īd, I. Ḥasan (1973) *Tārīkh al-baḥrīyah al-Miṣrīyah*. Alexandria: Jāmi'at al-Iskandarīyah.

Said, R. (1981) 'The GEOLOGICAL EVOLUTION of the RIVER NILE'. Available at:

<https://doi.org/10.1007/978-1-4612-5841-4>.

Said, Rushdi. (1993) *The river Nile : geology, hydrology, and utilization*. Pergamon.

Servantie, A. (2014) 'Development of Steamship Travelling In the Mediterranean 1833-1860', in D. Couto, F. Gunergun, and M. Pia Pedani (eds) *Seapower, Technology and Trade Studies in Turkish Maritime History*. Istanbul: Denizler Kitabevi. Available at:

https://www.academia.edu/8305759/DEVELOPMENT_OF_STEAMSHIP_TRAVELLING_In_the_Mediterranean_1833_1860 (Accessed: 16 January 2025).

Shahin, Mamdouh. (1985) *Hydrology of the Nile Basin*. Elsevier.

- Shenouda, S.M. *et al.* (2018) 'The most economical configuration of pushed barge convoy system through cairo-aswan waterway', *Brodogradnja*, 69(2), pp. 135–145. Available at: <https://doi.org/10.21278/BROD69209>.
- Smith, A.C. (1868) *The Nile and its Banks: A journal of Travels in Egypt and Nubia*. London: John Murray. Available at: https://archive.org/details/bub_gb_kRDXB9HpZv0C.
- Smyth, H. (1906) *Mast and Sail in Europe and Asia*. EP Dutton.
- Smyth, H.W. (1906) *Mast and Sail in Europe and Asia*. London: John Murray. Available at: <https://archive.org/details/mastandsailineu00smytgoog>.
- Starkey, P. and Starkey, J. (2001) *Travellers in Egypt*. Tauris Parke Paperbacks. Available at: https://books.google.co.uk/books/about/Travellers_in_Egypt.html?id=ojEhe_tsd3MC&redir_esc=y (Accessed: 13 May 2018).
- Stubens, F.R. (1993) *THE MEDITERRANEAN MAILS*. Toronto: Philatelic Specialists Society of Canada. Available at: <http://philatelicspecialistsociety.com/MEDITERRANEAN-MAILS.pdf> (Accessed: 13 May 2018).
- Sulaymān, 'Abd al-Ḥamīd (2000) *al-Milāḥah al-Nīlīyah fī Miṣr al-'Uthmānīyah 1517-1798*. Cairo: al-Hay'ah al-Miṣrīyah al-'Āmmah lil-Kitāb.
- Syrhnc, I. (1896) *Ḥaqā'iq al-akhbār 'an bilād al-biḥār*. Cairo: al-Maṭba'ah al-Amīrīyah.
- Syrhnc, I. (1898) *Ḥaqā'iq al-akhbār 'an bilād al-biḥār*. Cairo: al-Maṭba'ah al-Amīrīyah.
- The Ministry of Communications (1960) *Seven Years of Communications in the Egyptian Region of the U.A.R.* Edited by A.G. el-Zanati. Cairo: The Ministry of Communications.
- The World Bank (2008) *World Bank internal water transport in Egypt*. Washington. Available at: https://www.google.com/search?q=world+bank+internal+water+transport+in+egypt+2018&sca_esv=204cf606c36776c7&rlz=1C5CHFA_enEG1012EG1013&sxsrf=ADLYWIL4ZwSfVmjQsatr_m0Ndg37BDASqg%3A1737137622598&ei=1p2KZ9-gJJSci-gP4JWSwQ0&ved=0ahUKEwjf4673rf2KAxUUzgIHHeCKJNgQ4dUDCBA&uact=5&oq=world+bank+internal+water+transport+in+egypt+2018&gs_l=lp=Egxnd3Mtd2l6LXNlcnAiMXdvcmxkiGJhbmsgaW50ZXJuYWwg2F0ZXlkdHJhbnNwb3J0IGluGVneXB0IDlwMTgyBRAhGKABMgUQIRigAUi1F1DHBVjEEXABeAGQAQCYAcQBoAHIBaoBAzAuNbgBA8gBAPgBAZgCBqAC8wXCAGoQABiwAxjWBBhHwgIFECEYnwXCAGQQIRgVmAMAIAYBkAYIkgcDMS41oAe_JQ&scient=gws-wiz-serp (Accessed: 17 January 2025).

List of References

Toussoun, O. (1942) *Tārīkh Khalīj al-Iskandariyah al-qadīm wa-tur'at al-Maḥmūdīyah*. Cairo.

Available at:

<https://www.abjjad.com/book/2173731917/%25D8%25AA%25D8%25A7%25D8%25B1%25D9%258A%25D8%25AE-%25D8%25AE%25D9%2584%25D9%258A%25D8%25AC-%25D8%25A7%25D9%2584%25D8%25A7%25D8%25B3%25D9%2583%25D9%2586%25D8%25AF%25D8%25B1%25D9%258A%25D8%25A9-%25D8%25A7%25D9%2584%25> (Accessed: 13 May 2018).

Waghorn, T. (1844) *Messrs. Waghorn & co.'s overland guide to India, by three routes to*

Egypt ... London: Smith, Elder and Co. Available at: [http://www.worldcat.org/title/messrs-](http://www.worldcat.org/title/messrs-waghorn-cos-overland-guide-to-india-by-three-routes-to-egypt/oclc/48689491)

[waghorn-cos-overland-guide-to-india-by-three-routes-to-egypt/oclc/48689491](http://www.worldcat.org/title/messrs-waghorn-cos-overland-guide-to-india-by-three-routes-to-egypt/oclc/48689491) (Accessed: 13 May 2018).

Weighall, A.B. (1915) *A History of Events in Egypt from 1798 to 1914*. Edinburgh: William

Blackwood and Sons. Available at: <https://archive.org/details/historyofeventsi00weiguoft>.

Wilkinson, J.G. (1843) *Modern Egypt and Thebes: Being a Description of Egypt; Including the*

Information Required for Travellers in that County. London: A. Sporiswood.

Wilkinson, J.G. (1854) *A Popular Account of the Ancient Egyptians*. London: John Murray.

Available at:

https://books.google.com.eg/books/about/A_Popular_Account_of_the_Ancient_Egyptia.html?id=P7tSAAAACAAJ&redir_esc=y (Accessed: 16 January 2024).

Wilson, J. (1964) *Wonders Pharaoh: A History of American Egyptology*. Chicago: The University of Chicago.

Winston Churchill, B.S. (1902) 'The River War—An Account of the Reconquest of the Sudan—1902', *vonsteuben.org* [Preprint].

Woodward, J.C. *et al.* (2008) 'The Nile: Evolution, Quaternary River Environments and Material

Fluxes', *Large Rivers: Geomorphology and Management*, pp. 261–292. Available at:

<https://doi.org/10.1002/9780470723722.CH13>.

Yousef, S. *et al.* (no date) 'THE GREAT NILE FLOODS OF 1998 AND 1999; SUCESSFUL FORECASTS

USING SOLAR TERRESTRIAL RELATIONS AND REAL DATA', *Citeseer* [Preprint]. Available at:

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.562.5358&rep=rep1&type=pdf>

(Accessed: 13 May 2018).

