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Fisheries and fishing boat building traditions in Egypt during the Islamic period

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Abstract

There is a lack of information about fisheries and fishing boat building traditions in Egypt during the Islamic era (starting 18 AH /639 AD/CE), as most sources from this period only focus on commercial or military activities. Therefore, this research refers to the types of boats that were recorded by foreign travelers to Egypt during the period under study. This report highlights that the use of rafts continued in Egypt throughout the Islamic era, as illustrated by Captain Frederick Ludwig Norden the Younger during his travels on the Nile with the Danish Navy in 1737. He noted that the Egyptians used rafts for fishing and for crossing the Nile. In addition, papyrus boats were widely used for fishing and river crossings in the ancient pharaonic era, a tradition that continued into the Islamic period. Finally, wooden boats were also built for the purpose of fishing.

Keywords: fishing boats, rafts, Islamic period, medieval fisheries, Egypt, boat building, fishing tools.

Introduction

The ancient Egyptians had a long history of interacting with the sea and building boats and ships, long before the Islamic conquest in the first century AH (Anno Hegirae) / seventh century AD/CE. In the Middle Ages, during the rule of Qurra ibn Sharik al-Absi, governor of Egypt from 90-96 AH (709-715 AD/CE), the Egyptians

played a major role in the building of the combined Egyptian, Moroccan and Syrian Islamic fleet. During the Umayyad caliphate (41-132 AH / 661-750 AD/CE), founded by Mu'awiyah I, three fleets appeared, including the Egyptian fleet, which required constant upkeep, amounting to seven thousand dinars annually. The second Islamic fleet, which was heavily reinforced due to Mu'awiyah's recruitment of Egyptian shipbuilders, led to the building of the arsenal "Dar" in Acre. This resulted in the construction of many ships, and Acre went on to become the most important naval base in the Levant. The third fleet was the North African Fleet, commanded by Abd al-Malik bin Marwan, who ruled from (65 to 86 AH / 685 to 705 AD/CE). He exploited skilled Egyptian workers to establish a powerful naval fleet (Elabady, 1972: 25; Abdullah, 2017: 2350).

Marine symbols in Islamic

Muslim artists were influenced by the natural elements surrounding them, such as birds, plants, flowers, trees, and fish. They were especially interested in drawing fish on ceramics, one of the favorite subjects of artists from the Mamluk era (647- 978 AH/1250-1517 AD/CE). They found a variety of ways to depict them, painting lone fish in the middle of bowls and plates, in pairs, or in concentric circles (Fig. 1) (Murad, 2017: 764).

Medieval fisheries in Egypt

Interest in fisheries continued throughout the Islamic era, even leading to the establishment of a governing syndicate (or "*diwan*" founded by Ibn al-Mudabbir, a senior administrator in the Abbasid caliphate (195-279 AH / 811-893 AD/CE). The taxes registered by the *diwan* were known as the tax for stakes and nets (مضارب (الأوتاد ومغارس الشباك). In addition to the *diwan*, a clerk was delegated to follow up the tax collection in several regions, including Alexandria Bay, Alexandria Lake, Burullus Lake, Damietta, and Aswan (Al-Maqrizi, Al-Maqrizi plans part I "الخطط المقريزية الجزء الاول" [in Arabic] 1997: 107-108).

Mullet (*Mugilidae*) was fished at Lake Tinnis, Lake Nastro and Lake Alexandria. The name goes back to one of the villages of Tinnisenis. The state of the fisheries has long since deteriorated, except for those at Lake Tinnis and Lake Nastro. However, during the Ottoman era (923- 1219AH /1517-1805/1867 AD/CE), a fisherman required permission from the sultan to fish and had to pay taxes on his catch. As for Lake Alexandria, it dried up and the Aswan fisheries were removed from the Sultan's control. What was caught from the Nile was carried to the Fish House in Cairo (Al-Maqrizi, Al-Maqrizi plans part I "الخطط المقريزية الجزء الاول" [in Arabic] 1997: 107-108).

The state's dealings with fisheries differed from time to time, but they were often below the level of state control. As such, they were considered among the lands that gave citizens the right to exploit in return for paying taxes. Other times, however, the fisheries were exploited directly by the state, and returned to the tax system, except for Burullus Lake and Manzala Lake, which were both seized by the public treasury to dispose of and what is caught from the Nile is carried to the Fish House in Cairo (Mahmoud, 1967: 20).

Some of Egypt's main fisheries during the Islamic period are as follows:

Al Manzala Lake

Lake Manzala was formerly known as Lake Tinnis. It is connected to the Rumi Sea (Red Sea), the Mediterranean Sea, and to the Ashmom Sea ("the Small Sea"), which connected the lake to the Nile River. As

such, its waters were notoriously rough during the Nile flood (Al-Qalqashandi, 1914: 308; Al-Qazwini, 2004: 176).

The people of Lake Manzala were famous for their fishing. During the Ottoman period, approximately 1,100 men worked under the auspices of forty chiefs, who in turn were subject to Hassan Tobar (died ca. 1800 AD/CE), a rich and powerful sheik who had the right to fish in Lake Manzala in return for a royalty paid to the ruling Mamluk Beys. The number of fishing boats in the lake at that time reached about three hundred seventy-two boats, the largest of which could carry sixty men, while the smallest could carry three. The lake's fishermen were mostly naked while they worked (Al-Rafi'i, 1955: 328-329; Bassam, 1966: 177; Shayeb, 1999: 24-27).

It is worth mentioning that they also had an important role in alerting Egyptian troops to the presence of enemy soldiers during the French campaign (1798-1801 AD/CE). If they saw one, they would bang tambourines and make frightening screams. Hassan Tobar also provided them with weapons and used a fleet of fishing boats to repeatedly repel French attacks on the lake (Al-Rafi'i, 1955: 328-329; Bassam, 1966: 177; Shayeb, 1999: 24-27).

The fishing boats of Lake Manzala had the same characteristics as the fishing boats on the Nile River, as they had a bow that was about 70 centimeters higher than the low stern, a feature that made the process of casting and retrieving nets easier. In addition, a similar concave keel lay in the middle of the ship. Navigation in the lake was carried out by sails, oars, and long sticks (punting poles) (Shayeb, 1999: 26).

Poet and historian, Ibn Bassam, who lived in the last quarter of the sixth century AH and the first quarter of the seventh century AH (1058-1147 AD/CE), mentioned in his book *Anis al-Jalis fi akhbar Tinnis* – أنيس الجليس - في أخبار تينيس the names of some fishing boats in Lake Tinnis. He listed: "Algrafat الجرافات – Ankbarat الانكبارات – Ainat العينات – Alsad السد – Altrahien الطراحين – Algragn الجراغن – Albaryat الباريات - boats of canals, farmers and cooks - مراكب المضارب - Almadarb boats - الدق - Aldak - مراكب القود - fuel boats - مراكب التربة و الفلاحين والطباخين - Alkarndas boats - مراكب القرندس - Allbanien boats - مراكب اللبانين - Aldoar boats - مراكب الدور." Despite Ibn Bassam descriptions of the fishing boats, he did not find anything similar in any of the other references. There were also many names for different types of fish and sea creatures in the text, including: mullet (Nile Tobar), tilapia (Nile tilapia), catfish, ray, crocodile, dolphin, and jellyfish. (Bassam, 1966: 177-186).

During the late sixth and early seventh centuries AH, during the period of Ayyubid rule over Egypt (567-659 AH / 1171-1260 AD/CE) the government's revenue from the excise duties imposed on fishing was vast, estimated by Ibn Bassam to be fifty thousand dinars per year. The government supervised fishing and the collection of its excise duties through Diwan al-Asmak, located in the tribal part of the lake next to the fisheries stores (Bassam, 1966: 177-185).

Aswan

Aswan was famous as one of the main fisheries in medieval Egypt. Some of its fish were salted and stored in clay pots for long-distance trade. The fisheries had a bureau established by Ahmed bin Al-Modaber, who was a senior minister in the Abbasid caliphate (811-893 AD/CE / 195-279 AH) and assigned government employees to conduct fishing until the Aswan fisheries fell into neglect after the area was removed from the Sultanate's control (Alhawiry, 1996: 89).

Lake Burullus

Lake Burullus was called Lake Nestro prior to the Islamic conquest (640AH /1243AD/CE), after which it was established as an important naval base t, located between Damietta and Alexandria. The lake's economy was almost exclusively tied to fishing. At the end of the eighth century AH / fourteenth century AD/CE, the value of its yearly catch was more than twenty thousand Egyptian dinars, more than any other lake in Egypt at the time (Al-Hamwi, 1977: 284; Al-Qalqashandi, 1914: 308).

Fayoum

Described as a freshwater pond, its many species of fish generated a lot of income for the lake's fishermen, and its boats were similar to the Nile boats (Al-Qalqashandi, 1914: 307).

Abu Qir Lake

Abu Qir Lake is a saltwater lake that is connected to the Mediterranean Sea, located between Alexandria and Rashid. It also contained profitable fisheries during the medieval period (Al-Qalqashandi, 1914: 307).

Fishing boats in the Islamic period

Rafts

Ceramic-pot rafts

The use of rafts continued from ancient times into the Islamic period in Egypt, as observed by Captain Frederick Ludwig Norden the Younger during his travels on the Nile with the Danish Navy in 1737. He noticed that the Egyptians used rafts for fishing and crossing the Nile. The rafts were made from stacked ceramic pots, affixed to each other and covered with palm leaves. Norden's main drawing of this type of raft shows that it consisted of forty-four pots arranged in eleven rows, seven pots in the stern, while the bow contained one to appear triangular. The deck was covered with palm leaves. This raft had a rudder attached to its stern and was crewed by two people, one to use the paddles, the other to operate the rudder. The narrow-bladed oars were held in place by two wooden riggers, between which the oar rested. The oars were designed with narrow ovoid blades that gradually widened along the shaft (**Fig. 2**).

Another of Norden's drawings depicted an even smaller raft that consisted of five pots in row arranged to make the stern was crewed by one person and did not contain a rudder but had paddles. The paddles were wide, square at the end and not attached to the raft. In both cases the pots seemed to be of uniform production, circular in shape, with a wide neck attached directly to the body of the raft. The pots were arranged with their rims towards the top, all of them without handles, and attached to each other by cross ropes from the bottom (**Fig. 3**) (Copper, 2011: 346-347).

The same rafts are recorded in old Cairo by the eighteenth-century English churchman and writer Richard Pococke, who travelled up the Nile River in 1737. He depicted two rafts , one in the water and another one being carried on the back of a man. The paddles were notably different from Norden's descriptions, the blade being triangular (**Figs 4 and 5**) (Cooper, 2011: 346-347).

Reed rafts

Ancient Egyptian representations of Nile scenes often depict reed rafts made of papyrus. This early type of watercraft continued into the Islamic period. During his travels in Upper Egypt in 1802, the first director of the Louvre Museum, Dominique Vivant Denon, illustrated such a raft made of two curved bundles of reeds attached together, and ridden astride by a man with his legs in the water (**Fig. 6**) (Cooper, 2011: 352).

Wooden fishing boats in the Islamic period

Types of wood in Egypt

There are many opinions about the availability of wood in Egypt for shipbuilding. Generally speaking, boats were built from local wood, however, in Egypt, the quality of the wood was not as good as some of the types used abroad (Maher, 1967: 170). At the beginning of the Islamic period in Egypt in 20 AH / 639 AD/CE, the Egyptians developed their already considerable expertise in boat construction. In addition to their existing skills, the Egyptians also had access to good natural resources for boat building. Evidence of this is shown by the founder and first caliph of the Umayyad dynasty, Mu'awiya ibn Abi Sufyan, who hired Egyptians to build an Islamic Naval fleet. It is inferred from the papyrus documents that go back to Qara bin Sharik, the governor of Egypt (from 86 to 96AH / from 705 to 715 AD/CE), about the jobs of many shipbuilders in Egypt at that time, such as carpenters, who might have worked in the shipyard in Alexandria (Maher, 1967: 170). Among the tree species grown in Egypt is the Acacia; its lumber ideally suited for making masts and ship boards. It was widely available in Egypt, especially in Bahnasa, Ashmounin, Assiut, and Akhmim. Also available were the Sycamore Fig, Tamarisk, and Dom trees, suitable for making oars, as well as the Dacus plant, from which ship ropes were made. The Egyptians could also source iron needed to make ship's nails, hooks, and anchors (Elabady, 1972: 24-25)

Despite an abundance of resources in Egypt, at the time of al-Hakim bi-Amr Allah (374-411 AH / 985-1021 AD/CE), the sixth Fatimid caliph, the availability of lumber sharply decreased. This was because of the burning of the Islamic fleet by the Byzantines in 386 AH / 996 AD/CE, after which only six empty boats without any weapons remained undamaged. This happened in Dar Al-Maqs, currently Al-Fajala near Azbakeya in central Cairo. In response, all the wood in Egypt was taken by Al-Hakim bi Amr Allah to build a new fleet. Due to the importance of acacia wood, the Ottoman state forbade individuals from using it, appointing guards to protect the trees. It could only be used for the construction of naval ships (Mamati, 1943: 344; Maher, 1967: 170; Al-Maqrizi, 1997: 20; Cooper, 2011: 351).

Ultimately, Egypt could not produce enough wood for the construction of its own ships, forcing the government to import timber from the Levant and Anatolia. In the fourteenth century AD, the city of Venice also supplied Egypt with wood for shipbuilding, which provoked the Byzantine emperors, who subsequently threatened and intervened to prevent Italian cities from further supplying Egypt with timber. However, the Venetians did not refrain from providing Egypt with the wood it needed to build ships, so as not to sacrifice its trade interests (Maher, 1967: 170). **Fishing boat building traditions during the Islamic period**

It is noticeable that the difference between Mediterranean and Red Sea boats was not only the types of wood and construction methods, but the method of caulking. Mediterranean vessels were caulked using bitumen, while those from the Red Sea were caulked with pieces of palm fronds dipped in grease (Maher, 1967: 197). ***Mediterranean Sea boats***

In the Mediterranean tradition, the wood was left for a period after being cut until it dried and cracks began to appear, which were then filled with melted wax, a process called caulking. After that, the boards were covered from the outside with a layer of bitumen or wax, or both. This smoothed the outer surface of the hull, in addition to protecting it from water seeping into the wood. In some cases, molten tin replaced the bitumen. When painting the ships, Pliny recorded that several colors were used to decorate their hulls, such as scarlet, yellow, violet, blue, green, and white (Maher, 1967: 171).

Red Sea boats

Since the nature of the Red Sea differs from the Mediterranean Sea, with its rocks, sea currents, winds and hurricanes, this difference required a change in the construction techniques of ships. Therefore, vessels used in the Red Sea needed special types of wood characterized by their durability to withstand the harsh weather and marine conditions. The hull panels were made of teak or coconut wood, which are durable, but not especially hard, thus easy to use. Grown in abundance in southern India, Burma, Indonesia, and Siam (modern-day Thailand), the wood used for shipbuilding at the Red Sea port of Ayzab, south of the Eastern Desert and 24 km north of the city of Halayeb, was imported from India and Yemen. The ship's hull planks were affixed to each other by means of fiber threads, which were inserted into holes made near the edges of the adjacent planks. The threads were inserted into the holes with palm sticks, so no nails were used in the construction of the boats. Upon completion, the boat was painted with castor oil or ghee until the planks softened. Most of the Red Sea ships were distinguished by not having a deck or a roof, but rather were open to the elements. Most of the time, sailors stood in a pool of water, which they baled over the side. The ships were usually constructed with one sail (Maher, 1967: 192-198).

Theories about why ships are built with threads instead of nails

Travellers and historians differed in their opinions about the reasons why threads were used in the construction of Red Sea ships instead of nails. These threads would often break, and needed to be repaired at least once a year. Travellers' books are full of stories of sewn ships sinking in high winds. The sailors had to constantly bale water over the sides of the vessel because the hull planks let water seep in, and because they had no stern post. There was a popular legend in the Middle Ages that the Red Sea was full of magnetic rocks that attracted ships constructed with iron nails. Some travellers and historians suggested that the reason for not using nails in Red Sea ships was that seawater dissolved iron, thus weakening the hull. Others believed the real reason was the relatively high cost of making iron nails, which included extracting ore from mines and smelting it, which was an expensive process, especially when compared to the use of cheap and easily-sourced thread (Maher, 1967: 196).

Regarding fishing tools, the same fishing methods continued to be used throughout the Islamic era, including fishing with hooks, nets, traps, wooden rods/lines, and reeds, so nothing changed (Al-Suyuti, 1968: 351; Majeed, 2020: 3523).

In conclusion, there is no doubt that a huge amount of time, expense, and effort went into boat and shipbuilding during the Islamic period in Egypt. While marine elements appeared in Islamic art, there was interest in the exploitation of fisheries, as some of them came under the direct control of the Sultan. Finally, the use of the same fishing tools that the ancient Egyptians used, such as baskets, nets, and spears, continued.

Figures

Fig. 1 The depiction of fish as marine elements in Islamic art (Murad, 2017: 764).

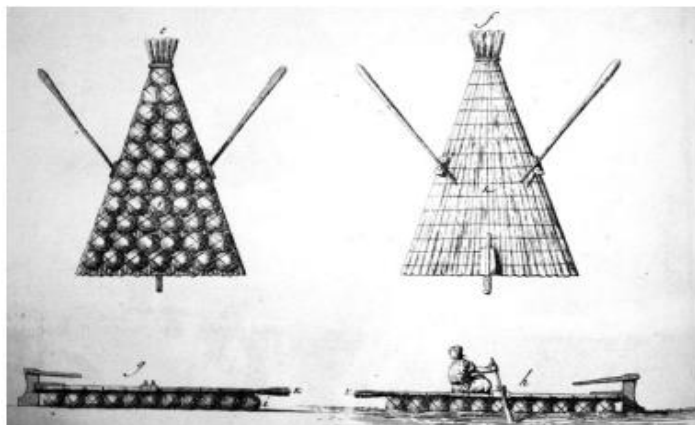


Fig. 2 Nile ceramic pot raft (left) and papyrus reed raft, both used for fishing and personal transportation (Copper, 20113: 46)



Fig. 3 In this image, a fishing line can be seen in the man's mouth (Cooper, 2011: 346).

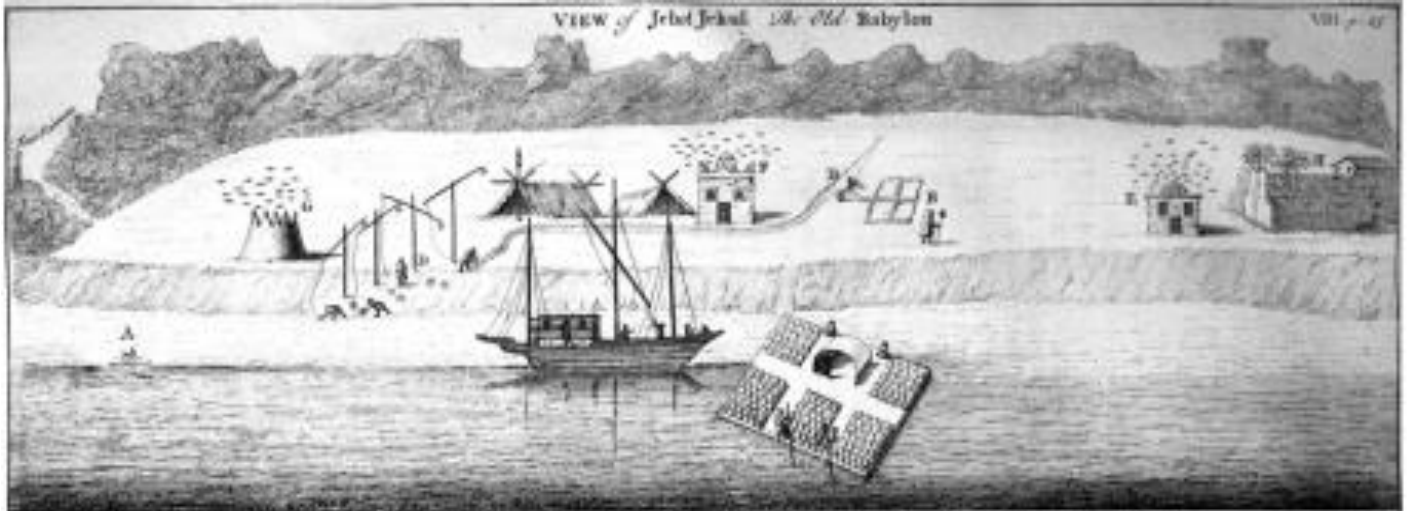


Fig. 4 A view of Old Cairo is shown on the shore to the right of the boat, as illustrated by Richard Pococke in 1737. Note the figures marked A which a man is using his raft and B which a man carry his raft (Cooper, 2011: 347).



Fig. 5 Enlarged view of the two figures in the above scene (Cooper, 2011: 347).

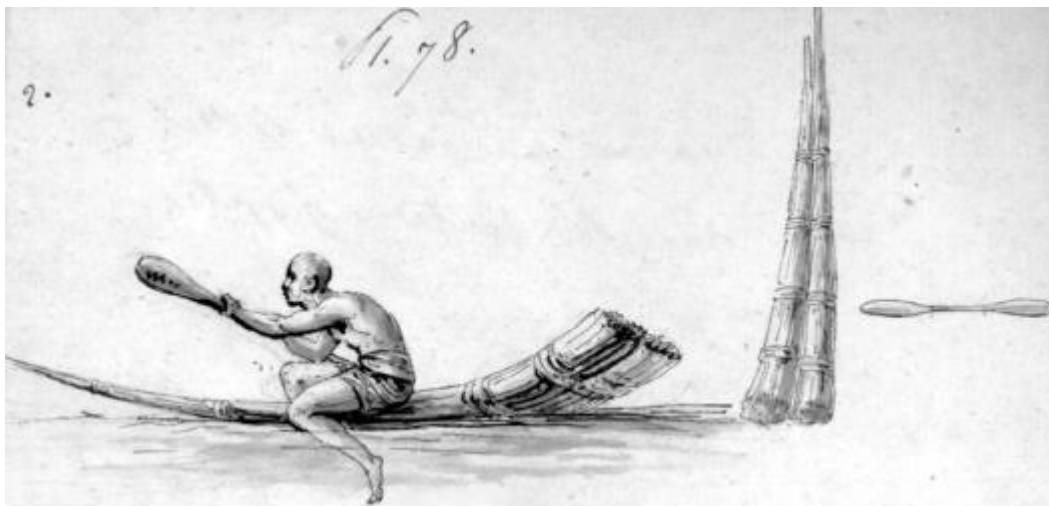


Fig. 6 Nile raft as illustrated by Baron Dominique in 1802 (Cooper, 2011: 353).

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