

The Greek and Roman Ports of the Red Sea Coast in the Eastern Desert of Egypt

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Abstract

The ports of the Red Sea in the eastern desert of Egypt played a vital role through Ptolemaic and Roman period in the eastern trade of Egypt via different ports. This research had several points that studied the historical and the archaeological sides of the ports of the Red Sea in Egypt. Eastern desert geography indicates that large desert in eastern Egypt originating just southeast of the Nile Delta; it extends from the Nile River Valley east ward to the Gulf of Suez and the Red Sea. The history and importance of the Red Sea ports discuss the extent of the influence of these ports on the movement of trade through Greek and Roman times. There are several ports date back to this period such as:- *Arsinoe port, Abu Sha'r port, Philoteras/Aenum port, Nechesia Port, Ptolemais Theron Port, Berenike port, Myos Hormos "Quseir" Port* . This research indicates the excavations at the ports of the Red Sea such as fort of Abu Sha'r, Serapis temple at Berenike and other several buildings. There are numerous inscriptions carved on stone, papyri, and ostraca from the Ptolemaic and Roman period that provide information of the ports of the Red Sea coast of Egypt. It concludes with a set of results, as well as the recommendations need to preserve the diverse archaeological sites of the ports of the Red Sea.

Keywords: Eastern Desert, Port, Arsinoe, Abu Sha'r, Philoteras, Berenike, Myos Hormos, Road.

Introduction

Much of internal and external trade passing across the Eastern Desert in the Ptolemaic period initially seems to have been state sponsored or tightly controlled by the government. The annexation of Egypt as a province of the Roman Empire in 30 BC dramatically changed the nature and scope of the international commerce that landed at the Red Sea ports and traversed the Eastern Desert. Red Sea ports founded in the Ptolemaic era were enlarged and reinvigorated by the Romans. Unlike Ptolemaic times when Egyptians contacts with India to have been very limited and quite sporadic, during the Roman period, especially in the first century AD and later, there was extensive interaction between the Egyptian Red Sea ports of Myos Hormos and Berenike on the one hand and India on the other.

Methodology

The researcher used descriptive and historical methodology. The researcher tried to describe the ports of the red sea located in the eastern desert of Egypt and their development through Ptolemaic and Roman period. It was mentioned the historical side through the ancient historians and the excavations in the area.

First: Geography of the Eastern Desert

The Eastern Desert in Egypt is the region between the Nile in the west and the Red Sea to the east (Forster and Riemer, 2013) (Figure 1).

Figure (1): Map indicates position the Eastern Desert



from: (Boulos, 2008)

The Eastern Desert covers an area of about 223,000 km. It is bordered by the Nile Valley on the West and by the Suez Canal, the Gulf of Suez and the Red Sea on the East (Buolos, 2008). Two major phytogeographical regions are usually recognized within the Eastern Desert: the Red Sea coastal region and the inland desert (Boulos, 2008), as following:

(1) The Red Sea coastal region

The Red Sea coastal area in Egypt extends about 2,250 km long from Suez to Halaieb near the Sudanese border (Sidebotham, Hense and Nouwens, 2008; Boulos, 2008) and, 355 kilometers wide. The maximum depth ever recorded is 2,850 meters (Sidebotham, Hense and Nouwens, 2008).

(2) The inland desert

The inland part of the Eastern Desert, an area of about 223,000 km, constitutes a rocky plateau dissected by numerous wadis and their tributaries, between the Red Sea coastal mountains and the Nile, and may be divided into 4 main ecological regions: (a) Cairo Suez Desert – (b) Limestone Desert – (c) Sandstone Desert – (d) Nubian Desert (Boulos, 2008).

Second: The history and importance of the Eastern Desert through Greek and Roman period

The word "*desert*" originated as an ancient Egyptian hieroglyph pronounced *deshert*, which means a place that was forsaken, or left behind. From this came the Latin verb *deserter*, to abandon (El-Baz, 1988). The Eastern Desert of Egypt had long been visited and exploited by ancient Egyptians, but it was subject to systematic organization, with settlements, wells, mines, and quarries, in the Ptolemaic and (particularly) the Roman period (Lloyd, 2010). The region of the Eastern Desert in Egypt is rich in stone and minerals and was also important for the commercial traffic between the Nile Valley and the Red Sea (Forster and Riemer, 2013), as following:

(1) Ptolemaic Period

During that time the status of the Eastern Desert changed dramatically, Ptolemies needed the gold of the region to pay for their political and military endeavors within Egypt and particularly throughout the eastern Mediterranean. In addition to gold, the Ptolemies also believed that their armies required elephants, a species then unavailable in Egypt but soldiers from the Mediterranean discovered in the course of Alexander the Great's conquests in the east during

the 330s BC and his battles with Indian and other forces, that elephants could be effective weapons of war, the armored units of their day.

A number of ancient authors including Theophrastus¹ and Diodorus Siculus, from Sicily provide details about the Eastern Desert in Ptolemaic times. Their writings, some of which are now lost, and those of other Ptolemaic period authors, are preserved in some instances only in later Roman accounts. Diodorus visited Egypt in the middle of the first century BC and left some fascinating descriptions of the Eastern Desert in his day in his book *Bibliotheka*. Of special interest is Diodorus' detailed account of Ptolemaic period gold mining activities in the Eastern Desert (Sidebotham, Hense, and Nouwens, 2008). The activities included the acquisition of war elephants from more southerly regions of the Red Sea, which necessitated construction of a number of ports (Sidebotham, Hense, and Nouwens, 2008).

(2) Roman Period

Desert as a fiscal frontier of the Empire. It is already well known that this area played an important role as a commercial route connecting the Roman world and the Far East (Hekster and Kaizert, 2011). Based upon ancient literary sources and archaeological evidence, peak periods of relative peace and economic growth in Egypt and, more pertinently, in the Eastern Desert during the Roman era took place initially in the first and early second centuries AD. This is especially evident in the reigns of the emperors Augustus (27 BC – AD 14), Tiberius (AD 14-37), The Flavians (Vespasian, Titus, and Domitian, AD 69-96), Trajan (AD 98-117), and Hadrian (AD 117-138). There was also a brief flourish in the late second and early third century AD (Sidebotham, Hense, and Nouwens, 2008). In Roman times, Egypt's Eastern Desert was economically important for stone and minerals, especially granite from Mons Claudianus² and porphyry from Mons Porphyrites³ (Forster and Riemer, 2013). The Romans sought especially gold and hard stones. The latter hauled with great effort across the desert to the Nile valley and from there downriver via Alexandria to far-flung corners of the empire to decorate temples and other buildings in Rome, Constantinople, and lesser imperial metropolises (Sidebotham, Hense and Nouwens, 2008). It was also important because the trade route to Arabia, Eastern Africa and India passed that way (Forster and Riemer, 2013). Most of what is known about the archaeological profile of the Eastern Desert is constituted by intensive work on the Roman era fortifications, the port cities, such as Berenike and Myos Hormos, and the

¹*Theophrastus*: Theophrastus was a prodigious worker, voluminous writer, as well as an independent and original thinker, but only a fraction of his writings survived. *On the Causes of Plants* and *On the History of Plants* described the morphology, classification, and natural history of plants. In addition to his major studies of botany, Theophrastus also wrote about broader problems in metaphysics, biology, medicine, and the doctrine of the four elements. He was one of the first scientists to write a treatise on the classification of rocks and minerals, from: (Magner, N.L., 2002)

² *Mons Claudianus*: Mons Claudianus is part of a network of small fortified sites on the northerly overland desert route. It is situated in Egypt's Eastern Desert, approximately 50 km from the Red Sea, and 120 km from Caenopolis "modern Qena" on the Nile. In the other direction, It lies 75 km from the Red Sea at modern Safaga and about 24 miles south-east of the porphyry mountains. Mons Claudianus where in exhaustible quarries of porphyry and granite had been used for building purpose since the time of the Emperor Claudius. Mons Claudius was the source of hard gradiorite, used mainly for columns. This is now the most intensively studied of the Roman quarry sites in the eastern desert, from: (Tomber, R.S., 1996; Bender, L.J., 2004; Gardner, W., 1843; Ferdinand, G., 1995; Ian, S., 2003 and Sidebotham, E.S., Hense, M. and Nouwens, M.H., 2008)

³ *Mons Porphyrites*: Mons Porphyrites quarries located in the eastern desert mountains about 70 kilometers northwest of modern Hurgada, and 27 miles from the Red Sea. The porphyry quarries are highly interesting, from their having supplied Rome with stone for columns and many ornamental purpose, from the importance attached to them by the ancients, and from the extent of the quarries, the ruins there, and the insight they give into the mode of working that hard stone, from: (Bard, A.K., 2015; Valerie, M., 2007).

imperial mining complex (RIGGS, C., 2012). Numerous roads of various sizes and importance crisscross of the Eastern Desert, which was clearly a busy area in the early and middle Roman periods as well as in later Roman times (Sidebotham, Hense, and Nouwens, 2008). Major bases lay along the Nile Valley with smaller units rotated on temporary duty to outlying desert outposts and along the Red Sea coast (Sidebotham, Hense, and Nouwens, 2008).

Third: The ports of the Red Sea coast through Greek and Roman period

The going is good nearly everywhere in the Eastern Desert, and the roads were certainly not paved nor even prepared in any way except for very occasional places like the mountains around Wadi Hammamat where there are traces of road works (Forster and Riemer, 2013). The Red Sea ports were important stopping off points (Edwards and Head, 1987). The roads not only connected the river and sea ports, but some also led to mining and quarrying sites (Bard, 2012). At port sites, in particular, many foreign languages are represented. Some twelve written languages are attested at Berenike alone, including Tamil, Palmyrene, and a variety of other Semitic languages (Riggs, 2012).

While the construction, the trade and the roads of the ports through the Ptolemaic and the Roman times were as following:

(1) Ptolemaic Period

(1/1) The history of Ptolemaic ports Construction

Port construction at the northern end of the Red Sea was widespread from the time of Ptolemy II Philadelphus (285-246 B.C) and later. Red Sea emporia founded by Philadelphus or his immediate successors. The Ptolemies established about a dozen ports farther south beyond Egypt's frontiers, along what are today the Red Sea coasts of Sudan and Eritrea, and may have even built one somewhere in the Horn of Africa on the Indian Ocean (Sidebotham, Hense, and Nouwens, 2008).

The Roman conquest of Ptolemaic Egypt in 30 BCE proved to be a further stimulus to trade between the ancient Mediterranean and Indian Ocean worlds (Alpers, 2014). Ptolemaic interest in the region "Eastern Desert" was created to deal with increased and more frequent exploitation of the geological wealth of the area. So new ports were built as well as the contacts with Asia and the classical Mediterranean world were developed (Sidebotham, Hense, and Nouwens, 2008).

Ptolemy II Philadelphos (282-247 B.C) needed war elephants, and established hunting stations along the African coast. Strabo (64 B.C – 21 A.D) noted that the chief place founded by Philadelphos was Ptolemais Theron, but also several other elephant hunts and less known towns and islands along the coast. These elephant hunting stations along the Red Sea developed into trading ports that dealt with a variety of products (Edwards. and Head, 1987). The Ptolemaic navy had a presence to protect their interests and to ensure the safety of the Egyptian bound merchantmen and elephant transport ships plying the Red Sea (Sidebotham, Hense, and Nouwens, 2008).

The huge expense and logistical organization required to secure, transport, and train the beasts, and the otherwise increased commercial and naval activities of the Ptolemies in the region, necessitated that various Red Sea ports in Egypt be joined to the Nile with roads and support facilities(Sidebotham, Hense, and Nouwens, 2008).

(2) Roman Period

(2/1) The history of Roman ports Construction

Egypt played a pivotal role in the lucrative commerce flowing between the Mediterranean world on the one hand and other areas of the Red Sea and Indian Ocean basins on the other (Sidebotham, Hense, and Nouwens, 2008). Under Roman authority Egypt's trade with the distant East increased, not only in scale and intensity, but also in geographical scope (McLaughlin, 2010). The trade was of highly profitable luxury goods – including pearls, silk, exotic spices (especially pepper), incense, and medicinal plants. Large fleets of trading ships were financed by private merchants, with the Roman government benefiting from the high taxes collected on these imports (up to 50%) (Bard, 2012).

The international trade that passed through the Eastern Desert onward to the Nile and Mediterranean from the Indian Ocean via the Red Sea ports especially fascinated some Roman era authors. They also reported on the names, customs, and physical appearance of peoples living along the coast and in the desert itself (Sidebotham, Hense, and Nouwens, 2008). The first century A.D. saw an enormous growth in the Roman spice trade with southern and south East Asia. To reach the Indian Ocean, the ships sailed down the Red Sea. According to Pliny the Elder (23 A.D. – 79 A.D.) and the *Periplus of the Erythraean Sea* (90 A.D.), many different spices and products were carried from India, ivory from East Africa, and cinnamon from northern Somalia (Edwards and Head, 1987) (Figure 2).

Figure (2): The Eastern Desert Routes



from: (Donnelly, 2004)

Augustus ordered preparations for the Roman invasion of Arabia which began in AD 26. The governor of Egypt, Aelius Gallus, constructed a fleet of 80 war galleys and 130 transport vessels near the northern Red Sea port of Clysma. It is not recorded what happened to these transport ships after the failed invasion, but this ambitious scheme must have established major shipbuilding facilities and supply lines on the Red Sea coast (McLaughlin, 2010).

The Romans had constructed Red Sea shipyards capable of building and refitting hundreds of military vessels, including transport ships (McLaughlin, 2010). A major problem for Pharaonic settlement along the Red Sea was a lack of fresh water, so the Roman ports on the Red Sea, which provided part of the structure for the overseas trade network with the east, could only have operated by solving the water supply problem, by digging deep wells in the desert wadi of the inland routes and bringing that water by some means to the ports. In addition, agriculture was not possible at these Red Sea ports. Although fishing and hunting desert fauna were possible, and small herds of cattle, sheep, and goats could be kept, it would have been necessary to bring many food supplies from the Nile Valley (Bard, 2012).

In its final decades the Ptolemaic kingdom had been little more than a regional power with a failing infrastructure, but under Roman authority, Egypt was brought into an Empire that controlled virtually all of the Mediterranean territories and ruled over a population approaching 50 million people (McLaughlin, 2010).

Archaeologists have surveyed these desert routes and examined the ruins of the ancient stations. Their investigations have revealed that the Roman military also constructed dozens of solid platform watchtowers on the hills flanking the desert roads to the Red Sea ports. These towers were built within sight of one another to marauders were seen in the vicinity. These new protective measures greatly improved the confidence of the merchants who travelled the desert routes to and from the Red Sea ports (McLaughlin, 2010).

The ports of the Red Sea Coast (Figure 3)

Figure (3): Map showing the important ancient harbors on the Red Sea coast



from: (Sidebotham, E.S., Hense, M. and Nouwens, M.H., 2008)

(I) Arsinoe Port

Arsinoe port was known as Kleopatris, Klyasma, and modern Suez (Lloyd, 2010). The first port was Clysma, located at the northernmost point on the Red Sea, very close to modern Suez. It was founded in the Ptolemaic age, but was apparently not greatly utilized before the end of the second century A.D (Hekster, De Klejin, and Sloomjes, 2007). Clysma was located in Sinus Hieropoliticus (Gulf of Suez) and was a known port in ancient times, but was abandoned because of its shallow water (Tsiamis, Poulakou-Rebelakou, and Petridou, 2009).

Strabo says that it was located before the "hot, salt springs", which seem to point to a place not far from Ain Sukhna (Hot Spring) some 50 km south of modern Suez. Several modern scholars suggest that it is possibly situated to the south of the modern port of Safaga (Hekster, De Klejin, and Sloomjes, 2007). The choice of Clysma was far from random, as it was essentially the entrance to the channel of Trajanus. Arsinoe served the movement of goods to the Nile. Arsinoe, however, was abandoned due to the region's strong north-eastern winds (Tsiamis, Poulakou-Rebelakou, and Petridou, 2009). The rising prominence of Myos Hermos eventually overshadowed Arsinoe. The navigation to the northern ports, such as Arsinoe – Clysma, became difficult in comparison to Myos Hermos due to the northern winds in the Gulf of Suez. Venturing to those northern ports presented additional difficulties such as shoals, reefs and treacherous currents (http://www.newworldencyclopedia.org/entry/Roman_trade_with_India, accessed on 17 July 2015). This resulted in the creation of a new port (about 5 kilometers to the west), to the side of the current Suez canal, the old port of Clysma. Of course, Clysma faced the same problem of strong winds but a series of historical events (Tsiamis, Poulakou-Rebelakou, and Petridou, 2009).

Red Sea canal

The channel of Trajanus was not a new construction, but an improvement to the old channel of the Pharaohs starting from the city of Pithom¹ in Sinai and ending in Babylon, Nile (Tsiamis, Poulakou-Rebelakou, and Petridou, 2009; 16 ص ، 1991 ، السعدى). The Canal that connected the Nile river with the Red Sea was called as " Sesotris Canal " but there are several opinions about who was Sesotris : Senusret III or Sety I or Ramses II and by whom was built the canal? (Ibrahim, 2015). There was an opinion said that: "There are ruins on the canal which Sethos I and Ramses II intended to carry from the Nile at Bubastis into the Arabian Gulf, and which was completed as far as the lake of crocodiles "lake Timsah". The depression of the Wadi Tumulat, which the canal followed, crosses the land of Goshen. The cities could not be founded here till the canal from the Nile had provided water in sufficient quantity. A city of the name of (Pa-Rameses) could only be founded by a prince of that name. Being situated on the Canal of Rameses II, the city could only have been built by the prince whose reign we have placed from 138 B.C to 1322 B.C".

Sea communication between India and Egypt probably induced Darius to build a canal in Egypt. Darius finished a canal from the Nile to the Red Sea and erected a number of steles in commemoration of the opening of the canal, probably in the year 498 B.C Ptolemy II refurbished and completed a canal linking the Nile to the Red Sea in the region of Suez; this canal, revitalized in Roman times (Figures.4-5) (Ibrahim, 2015; Sidebotham, Hense, and Nouwens, 2008, 63 ص ، 2005 ، دعيس).

Figure (4): Map showing the location of the Red Sea canal in the region of Suez



from: (Ibrahim, 2015).

¹Pithom: Pithom town was generally known by its Hellenized name of "Heroonpolis". Pithom's name derives from the Egyptian Per Atum, which means the temple (or estate) of the god Atum. Pithom should be regarded as a city comparable to Ramses. Working at Tell el-Maskhuta in north- eastern Egypt have found clear evidence that this was the ancient city of Pithom and that it was founded by Necho II between 609 and 606 B.C, from: (Bard, 2005; Gillbert, 2009)

Figure (5): Nile to Red Sea Canal



from: (Donnelly, 2004)

At the beginning of the Ptolemaic period we have further evidence of work on the canal Ptolemy II Philadelphus recorded the cutting of a canal through the *Wadi Tumilat* in the text of the *Pithom Stela*¹ of his regnal year 16 (Donnelly, 2004). The commencement of the canal from the Nile was moved upstream from Bubastis to Phacussa², and an interesting innovation was reportedly introduced at Arsinoe which is hinted at by Strabo but spelled out more clearly by Diodorus Siculus:- "*But Ptolemy the second later finished the work and installed an ingenious lock at the most appropriate spot. This he opened whenever he wished to sail through and quickly closed it again after it had successfully served his purpose. And the rivulet flowing through this canal is called the Ptolemy, after he who created it, and it has at its mouth a city named Arsinoe*". It would appear that by the time of Cleopatra VII (51-30 BC) the canal had silted up (Donnelly, 2004; Strabo, 1854; Diodorus, 1814;708 -705 ص ، 2000 ، حسن) . The canal fell into disrepair during the first century BC, and Trajan (98-117 AD) seems to be restored it. The Trajanic Canal was probably the reopening of an older one which had fallen out of use (Sheehan, 2010).

Importance of the Red Sea Canal

In the monumental work "*Historia Francorum*" , Gregory of Tours (6th century AD) notes that Clysma was built not because the area was fertile but because that was where the river Trajanus ended and that the port was used to transport products to Egypt, which then made their way to India (Tsiamis, Poulakou-Rebelakou, and Petridou, 2009).

The canal clearly played a large part in opening access and increasing traffic between Egypt and the east (Sheehan, 2010), the Nile canal used as a high road for commerce (Gregorovius, 1995). The canal and its associated land routes played an increasingly dominant part in all trade coming through the Red Sea (Sheehan, 2010).

The harbor at Babylon would thus have played an important role in the transport down the canal and south into the Red Sea of the more bulky types of goods exported in return for Indian

¹*Pithom Stela "Tell el-Maskhuta Stela"*: The stela of Ptolemy II from Tell el-Maskhuta repeatedly name Tjeku and Atum the god of Tjeku, but Pithom only twice in passing. from: (Kitchen, 2003).

² *Phacussa / Faqus*: The town of Facus, which is about 35 km south of Tanis. Phacussa "Faqus" with hieroglyphic read "gsmt". It was situated on the Bubastis eastern branch of the Nile in the Delta. It was the chief city of the twentieth Nome known as the Arabian name – which included the Wadi Tumilat area. Most Egyptologists seem to follow the reconstruction proposed by J.Bal. However, since he identified the classical Phacussa with Saft el-Henna he has the river flowing much too far to the east through the edge of the desert. Phacusa is undoubtedly the modern Faqus, north of Bubastis, from: (Seters, 2010; Osman, 2003).

spices and luxury goods (Sidebotham, 2011; Sheehan, 2010). The time of the works in Clysma also manifest the importance of the channel, as this was used to bring supplies to workers and equip the ships anchored in the port (Tsiamis, Poulakou-Rebelakou, and Petridou, 2009).

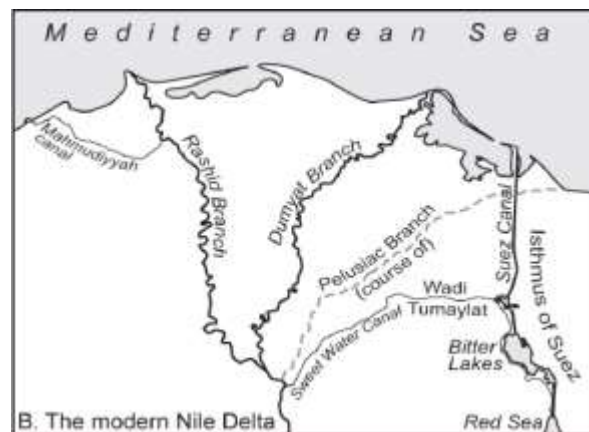
Location of Red sea canal

The river of Trajan (the well – known Amnis Trajanus or canal connecting the Nile and the Red Sea) flows through Heroonpolis and the city of Babylon (Butler, 1914).

The course of Red Sea canal

According to Ptolemy Geographer II: Trajan's canal passing from the Nile at Babylon near modern Cairo to the Red Sea at Clysma, while (Young, 2001). According to Peter Sheehan: The origins of Trajan's canal (Figure 6) lie in a much earlier Holocene eastern branch channel of the Nile¹ that flowed through the Wadi Tumilat² toward the depression of Lake Timsah³ and ; 5 ص ، 2005 ، سامى from there through the Bitter Lakes to the Gulf of Suez (Sheehan, 2010; إدوارد ، 1991 ، ص 87 ; جورجى ، 2001 ، ص 49; شيحة ، 1988 ، ص 83; كامل ، 2011 ، ص 269 ، 282 ، عبد العاطي ، 2010 ، ص 10).

Figure (6): Map showing the course of the Red Sea canal in the region of Suez



from: (Cooper, 2009)

(II) Abu Sha'r Port

The excavations at Abu Sha'r identified the remains not of a walled port town (Figure 7), but rather of a late Roman military garrison (Sidebotham, Hense, and Nouwens, 2008).

¹ *Holocene eastern branch of the Nile*: - The distributaries of the Delta of the Neo-Nile were more numerous during the Holocene. Seven major branches of the Delta existed and were shown on historical maps. These branches included, from west to east, the Canobic, Bolbitine, Sebennitic, Fatmetic, Mendisy, Siatic (Tanitic), and Pelusiac branches. Five of these branches degenerated and silted up, and two did not, the present day Damietta and Rosetta branches, from: (Tawadros, 2012).

² *Wadi Tumilat / Sweet Canal*: - Wadi Tumilat a fertile depression north of Bubastis in the eastern Delta, used by the ancient Egyptians as a path to the Red Sea. The Wadi led to the Bitter lakes, which in turn opened onto the Red Sea. The route was called the sweet canal by the Egyptians and was used by the late period "712-332 B.C" rulers to open a canal, from: (Bunson, 2009)

³ *Lake Timsah*: - The canal approaches and finally enters Lake Timsah abruptly at a distance of forty- one miles from Port Said. This lake, the name of which significance crocodile has been at some former period a fresh water basin fed by the Nile. The Egyptian name for the Timsah and Bitter lakes was km wr, *The Great Black*, from: (Hoffmeier, 2005)

Figure (7): Plan of Abu Sha'r



from: (Sidebotham, Hense, and Nouwens, 2008).

Abu Sha'r had two main periods of occupation, the initial construction and military use in the early fourth century AD, as well as a later occupation by Christian monks in the early fifth to possibly the early seventh centuries (Donnelly, 2004). Superficial comparisons of the site and its surroundings with ancient descriptions in the texts of Strabo (*Geography*) and Pliny the Elder (*Natural History*) confirmed in the minds of many nineteenth- twentieth century savants that the ruins at Abu Sha'r had to be the port of Myos Hormos. This association continued in some scholarly circles into the late 1980s despite evidence produced by our excavations conclusively demonstrating that the ruins at Abu Sha'r could not possibly be those of ancient Myos Hormos (Sidebotham, Hense, and Nouwens, 2008).

Abu Sha'r's road

Abu Sha'r was linked to the Nile Valley by a desert road leading to Qena (Kainepolis¹ (Bard, 2012) / Maximianopolis), several stations on this latter road operated in late antiquity clearly supporting coastal operations at Abu Sha'r by linking to Qena (Sidebotham, Hense, and Nouwens, 2008; Cohen, 2006) (Figure 8). This road was also the transport route into the Nile Valley for quarried stone from Mons Claudianus and Mons Porphyrites (Bard, 2012).

Figure (8): Map of quarry road network



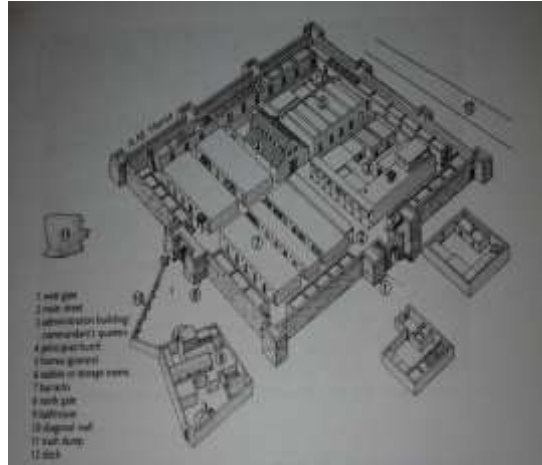
from: (Sidebotham, Hense, and Nouwens, 2008).

¹ *Kainepolis*: The town of *Keneh* marks the site of the ancient Kainepolis which being thus in Greek times called "New Town", cannot date earlier than that period. Koptos, Kaine (Qena) and Apollonopolis Magna "Edfu" were the points where the overland desert routes arrived and departed. Koptos, a Nome capital, was connected with the Red Sea through the Wadi Hammamat, which linked up with another important port for trade in luxury goods with the East, namely Myos Hormos, from: (Weigall, 2015; LLOYD, 2010)

Abu Sha'r's fort

One major site in this northern portion of the Eastern Desert that is probably best known is the late Roman fort at Abu Sha'r. The typical Roman fort here enclosed an area 77.5 meters (Sidebotham, Hense, and Nouwens, 2008; Cohen, 2006) (Figure 9).

Figure (9): Reconstruction of the Roman fort at Abu Sha'r



from: (Sidebotham, Hense, and Nouwens, 2008).

Large fragments of Latin inscriptions were excavated at the western gate of the fort in June 1990. The contents of these ancient texts were very exciting and provided for more information about the fort and the troops (Sidebotham, Hense, and Nouwens, 2008; Cohen, 2006). A damaged Greek inscription found in 1993 in the large building in the SW corner of the fort, records the visit of a traveler called Andreas (Figure 10). It is dated to the late fifth or sixth century AD. "*I, Andreas, traveler to India, came here.....Pauni -, 9th indication.*" Bagnall & Sheridan (1994b: 112). Bagnall feels this brief inscription is remarkable for the occurrence of *ινδικοπλεύστης*, a term that is used as a common noun referring to those who sail to India. He states, "It might be suggested that Abu Sha'r was of some commercial significance still in the sixth century, as it had been in the fourth". This inscription is included in this paper as acknowledgment that even during the later Roman period; Abu Sha'r was still being used and still had some contact with trade from the east (Donnelly, 2004).

Figure (10): Abu Sha'ar – Greek inscription



from: (Donnelly, 2004)

(III) Philotera/Aenum Port

According to Strabo Philotera was named for the sister of Ptolemy II Philadelphos. The Pithom Stele may contain a reference to Arsinoe and Philotera. His Majesty went to *Kemuer "Lake*

Timsah", he founded there a large city to his sister with the illustrious name of the daughter of King Ptolemy; a second abode was built likewise to his sister. Pliny, who calls this settlement "Philoteria", adds that it was also called Aenum, and describes it as "small town" (Cohen, 2006).

Philoteria is reported in several ancient texts including those of Strabo, Pliny the Elder, and by Claudius Ptolemy, the mid-second century AD scholar, in his *Geography*., Pomponius Mela "Roman writer", also records Philoteria in the early first century AD. The Roman authors from the late first century BC through mid-second century AD refer to the port, however, suggests its operation well into Roman times (Sidebotham, Hense, and Nouwens, 2008).

Regarding the *date of founding*, Tarn argued unconvincingly that Strayros established Philoteria before the marriage of Ptolemy II to Arsinoe II, which he dated to 276/5 B.C. On the other hand, Kortenbeutel claimed that Philadelphos decided to employ elephants in his army as a result of the First War (274-271 B.C). Thus he claimed that he could not have founded Philoteria before 271 B.C. Fraser argued that " the city was founded after the death of both Philoteria and Arsinoe, i.e., after 270" (though he admitted that the dedication to Arsinoe "unfortunately cannot be dated beyond doubt to the period after her death....but it looks to be of that date" [305]). Casson thought this happened around 270 B.C.

For the possible location of Philoteria, Murray who placed it on the coast at Mersa Gawasis. G.W.Murray originally placed Philoteria at Mersa Gawasis. Later he suggested that somewhere inland in the Wadi Gawasis¹ was the site of Aenum, which Strayros renamed Philoteria. D.Meredith followed by Desanges and Recherches, sited Philoteria at Mersa Gawasis and Aenum 14 km west in the Wadi Gawasis; i.e., Meredith suggested that Philoteria was the port city for Aenum. Fraser also located Philoteria at Mersa Gawasis but questioned Meredith's separation of it from Aenum (Cohen, 2006).

Work was then shifted to two sites on the Red Sea shore: (1) Mersa Gasus at the mouth of the Wadi Gasus, where no pharaonic remains were found by the expedition; and (2) Mersa Gawasis, a small dhow harbor at the mouth of the Wadi Gawasis, thought to be the site of the Ptolemaic port of Philoteria (Bard, 1999). Philoteria, and although several locations for it have been proposed (Sidebotham, 2011).

Pliny and Claudius Ptolemy disagree on the relative location of Philoteria vis-à-vis other Red Sea ports, but the general consensus among archaeologists today is that it lies somewhere in the vicinity of the modern port of Safaga; its location and identification remain to be determined (Sidebotham, Hense, and Nouwens, 2008; Fahd, 1989).

(IV) Nechesia/ Marsa Nakari Port

For the location of Nechesia port, Nechesia has never been positively identified, but according to a recent theory it could be located at Marsa Nakari (Hekster, De Klejin, and Slotjes, 2007). The location of Nechesia has been debated. RE, Murray and Meredith, among others, speculated that the sites of Mersa Mubarak or Mersa Nakari were appropriate for this putative Ptolemaic foundation. Recent surveys and limited excavations at Mersa Nakari, begun in 1999, have revealed a site partially surrounded by a wall (Keenan, Sidebotham, and Wilfong, 2000). Nechesia port may be tentatively identified with the ruins recently excavated at Marsa Nakari,

¹ Wadi Gasus: It (26°33' N, 34°02' E) is a valley opening out from the Eastern Desert to the Red Sea coast, about 80 km south of Hurgada and 60 km north of Quseir. About 2km south of the wadi on the coast is Mersa Gawasis, a Red Sea harbor. Mersa Gawasis, which lies at the mouth of the Wadi Gawasis, was formerly thought to be the site of the 12th Dynasty port of Saww. About 7km from the sea on the south side of the Wadi Gasus are the remains of a Graeco Roman water station (*hydreuma*), from: (Bard, 1999).

about nineteen kilometers south of Marsa 'Alam (Sidebotham, Hense, and Nouwens, 2008) (Figure 11).

Figure (11): Map showing Marsa Nakari (Nechesia) – Edfu route



from: (Donnelly, 2004)

For the history of Nechesia port, archaeological excavations in 1999, 2001, and 2002 by a team from Northern Arizona University recovered substantial evidence for early and late Roman activity at this small port. However, little of Ptolemaic date was found aside from Terra-cotta oil lamp and a gold grinding stone (Sidebotham, Hense, and Nouwens, 2008).

Preliminary surveys and excavations at the port of Marsa Nakari were carried out in 1999 by John Seeger and his team, and a second season was conducted in 2002. This site is not referred to by either Strabo or the author of the Periplus, but only designated by Claudius Ptolemy, writing in the second century AD. However, the results from the first season indicate that occupation was likely in the first century AD, and there seems to be a hiatus in evidence for the second and third centuries, with a reoccupation in the fourth century (Donnelly, 2004).

For the importance of Nechesia port, the diminutive size and presence of a fortification wall around much of the site suggests that it was not a major player in long distance maritime commerce. It may well have served as a safe haven for ships sailing between Berenike, about 150 kilometers to the south, and Myos Hormos, about 150 kilometers to the north, and likely, other more northerly Red Sea ports as well (Sidebotham, Hense, and Nouwens, 2008).

A road, dating from Ptolemaic through Late Roman times, links the ruins at Mersa Nakari to the Nile opposite Apollonopolis Magna (Keenan, Sidebotham, and Wilfong, 2000), through the archaeological surveys in winter 1997 and summer 2000 identified an ancient road linking Marsa Nakari to Edfu (ancient Apollonopolis Magna) on the Nile. Various stations were found along this highway, for example the one at "*Bir Iayyan*"¹ and other mining communities that it served date from Ptolemaic times and later. This suggests that the route catered to traffic in that period including those journeying between Marsa Nakari and points in the hinterland or on the Nile (Sidebotham, Hense and Nouwens, 2008) (Figures 12-13).

Figure (12): Remains of the Red Sea site at Marsa Nakari "perhaps the ancient port of Nechesia"



from: (Sidebotham, Hense, and Nouwens, 2008)

¹ *Bir Iayyan*:- It was an unfortified Ptolemaic station at the foot of a sandstone bluff, where an inscription from 257 BC was found, from: (Bagnall, S.R. and Rathbone, W.D., 2004)

Figure (13): Artist's reconstruction of the Red Sea port at Marsa Nakari



from: (Sidebotham, Hense, and Nouwens, 2008)

The excavations and the archaeological remains of Nechesia/ Marsa Nakari Port

The archaeological surveys in winter 1997 and summer 2000 identified an ancient road linking Marsa Nakari to Edfu (ancient Apollonopolis Magna) on the Nile. Various stations were found along this highway, for example the one at "*Bir Iayyan*" and other mining communities that it served date from Ptolemaic times and later. This suggests that the route catered to traffic in that period including those journeying between Marsa Nakari and points in the hinterland or on the Nile (Sidebotham, Hense, and Nouwens, 2008).

(V) Berenike Port

For the location of Berenike port, Berenike in the south, which was first, located in the early 19th century by the Italian adventurer Giovanni Belzoni (Bard, 2012; Der Veen, Van, 1997). The first actually locate the site was the cartographer and geographer Jean Baptiste Bourguignon d'Anville, whose map helped Giovanni Belzoni to discover the ruins in 1818 (Woźniak, and Redkowsk, 2014). J.G.Wilkinson drew the first plan of any architectural structures visible above ground (Sidebotham, Hense, and Nouwens, 2008) (Figure 14).

Figure (14): J.G. Wilkinson's plan of the central area of ruins at Berenike, drawn in 1826



from: (Sidebotham, Hense, and Nouwens, 2008)

Berenike was the southernmost Roman port in Egypt (about 260 km east of Aswan) (Bard, 2012), which lies about three hundred kilometers south of Myos Hormos, and approximately 825 kilometers south of Suez (Sidebotham, Hense, and Nouwens, 2008).

Berenike located inside a natural harbor that is protected by a peninsula (Alpers, 2014). It lay in a sheltered bay, protected from northerly winds by the rocky Ras (Cape) Benas on the Red Sea coast of Egypt (Woźniak, and Redkowsk, 2014). The southernmost Roman settlement in Egypt and a terminal of the route connecting South India to the Roman Empire (Hekster and Kaizert, 2011). This port was located farther to the south than the other cities so the ships could avoid sailing against the north winds of the northern Red Sea (Sampsell, 2014) (Figure 15).

Figure (15): Map of Berenike



from: (Donnelly, 2004)

For the history of Berenike port, it was founded sometime before the middle of the third century B.C. Several travelers since the sixteenth century searched for the ancient port without success (Sidebotham, Hense, and Nouwens, 2008; Thomas, 2009). According to Pliny the Elder, Ptolemy II Philadelphus (285-246 BC) founded Berenike in about 275 BC and named it after his mother (Sidebotham, Hense, and Nouwens, 2008; Donnelly, 2004) and was, especially by the mid-first century A.D., one of the two busiest and most important harbors on the Egyptian Red Sea coast (Hekster, De Klejin and Sloopjes, 2007).

Investigation of the Hellenistic origins of the town began in earnest only after a full magnetic survey was completed of the western fringes of the site where the Ptolemaic foundation was believed to have been established (Woźniak, and Redkowska, 2014). Harbor facilities at Berenike were probably restored during the reign of Tiberius, and evidence suggests that there was greater government investment in the port during the period from AD 14 to AD 37 (MC Laughlin, 2010). It was founded as a port by Ptolemy II in 275 BC and was at its peak in the first century AD (Lloyd, 2010).

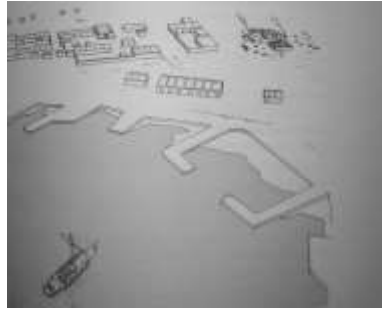
At Berenike located some architectural features that either are or appear to be harbor facilities. Their location immediately southeast of the Ptolemaic industrial area may suggest a date for construction and use. Found in scattered piles atop the berms were concentrations of vesicular basalt. This basalt was used for a variety of purposes including ballast for ships and as grinding stones for grain. These basalt stones may have been discarded from the holds of ships that had arrived at Berenike. While they remain unexcavated, the location and shape of the berms and the discovery of the basalt here suggests that this part of Berenike may well have been Ptolemaic or early Roman harbour (Sidebotham, Hense, and Nouwens, 2008; Donnelly, 2004) (Figures 16-17).

Figure (16): Berenike in fifth century AD.



from: (Sidebotham, Hense, and Nouwens, 2008)

Figure (17): Artist's reconstructed view of the Ptolemaic/early Roman harbor at Berenike



from: (Sidebotham, Hense, and Nouwens, 2008)

For the importance of Berenike port, Myos Hormos and Berenike played the most influential role in trade with India. These two ports received goods from all across the Indian Ocean which were then transported via the desert trade routes to the Nile at Coptos. From Coptos, they would be shipped down the Nile to Alexandria and then from Alexandria the goods were distributed throughout the Roman Empire by use of the Roman *mare internum*, the Mediterranean Sea. The multiple port system which the Romans employed gave them a distinct advantage over other empires invested in Red Sea trade (Lads, 2015).

Berenike was a gateway to the distant lands of Africa and the Indian Ocean littoral and the archaeological record from the site testifies to the scope and rich array of goods passing through this Red Sea port (Woźniak and Redkowsk, 2014). The creation of a port at Berenike was part of a broader project initiated by Philadelphus and his immediate successors to exploit the Eastern Desert and Red Sea coast not only of Egypt, but also of Sudan and other regions of the African littoral (Sidebotham, Hense, and Nouwens, 2008).

Berenike acting as a hub for an entire network of harbors along the western coast of the Red Sea provided the Ptolemies access to the resources of East Africa, repeating the model of Pharaonic trade expeditions to the southern territories. Ivory, exotic wood and gold were among the luxuries and valuable goods available in Africa, but perhaps even more importantly, the region was a source of elephants, which were of immense military value to the Ptolemies (Woźniak, and Redkowsk, 2014).

The most important reason for creating this new harbor was the need of the Ptolemy's for war elephant (Thomas, 2009), for bringing through wild elephants from Africa imported for use by the Ptolemaic army (Woźniak and Redkowsk, 2014). So Berenike was founded to facilitate the sea transport of elephants from East Africa to Egypt (Donnelly, 2004). The elephants were brought to Berenike from the south, through Ptolemais (Epi) theron or Ptolemais of the Hunt (identified tentatively with the neighborhood of Aqiq in modern Sudan, or some other port, whence inland hunting expeditions were organized (Woźniak, and Redkowsk, 2014).

According to Pliny the Elder and the *Periplus of the Erythraean Sea*, many different spices and products were carried from India, ivory from East Africa, and cinnamon from northern Somalia (Edwards, and Head, 1987).

However, this sheltered port made this an obvious location as an anchorage and it is likely that this and the already established infrastructure helped the growth of Berenike's secondary function as a Red Sea trade port during the late Ptolemaic period. When Egypt was annexed in 30 BC, the growing interest in the Erythraean Sea trade and possibly also Berenike's role as a military and administrative center caused major demographic and physical changes (Thomas, 2009).

Recent archaeological excavations in the ruins of Berenike have revealed that the Ptolemaic town enjoyed another period of activity under the Romans in the first century BCE and first century CE (Sampsell, 2014; Donnelly, 2004).

Berenike had similar problems during the 3rd century crisis. Berenike was able to remain operational, although at a limited capacity. Reasons for Berenike's precipitous decline in the 3rd century are varied. The 3rd century crisis within the Roman Empire lessened the demand for Indian luxury goods making the large international port of Berenike superfluous. Additionally, the plague which struck the eastern portion of the Roman Empire, particularly Egypt, in 165 CE must have reduced the populations of Berenike and its main trading partners, thereby further destabilizing Berenike's already fragile economy (Lads, 2015).

Berenike continued to enjoy a major role in Rome's trade with the Far East well into Late Antiquity. The port reached its second peak in the 4th century immediately after Rome's recovery from the 3rd century crisis (Lads, 2015).

For the Roads of Berenike port, the trade items that were landed at Berenike were loaded onto pack animals for the 200 or 300 km overland trip to the Nile. Throughout most of pharaonic history, donkeys were the only animals available to supplement human porters. But the Ptolemaic introduced the camel to Egypt. Although Aswan appears to be the closest Nile town to Berenike, the caravan routes led northwest to either Apollinopolis Magna (modern Edfu) or Coptos (modern Qift) (Sampsell, 2014).

Berenike was connected to Edfu via a desert route used in Ptolemaic times, but later the more frequently used route from Berenike was to Coptos (Bard, 2012), as following:

(I) Berenike-Apollonopolis Magna (Edfu) Road

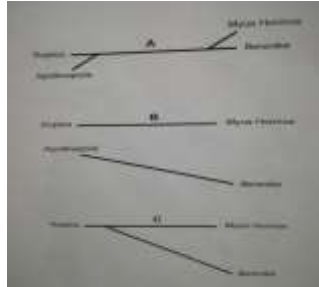
The 340 kilometer-long Ptolemaic highway between Berenike and Apollonopolis Magna was marked in some places with square-shaped cairns, wells (hydreumata), and fortifications. In addition to watching over those traveling between the Nile and the Red Sea, these desert garrisons also provided protection to gold mining operations on or near the route (Sidebotham, Hense, and Nouwens, 2008).

In Roman period the most important trade route was from Koptos to Berenike. It was longer than the road to Myos Hormos, but preferred because of the prevailing northern winds in the Red Sea which made it difficult to come back to Myos Hormos (Forster, and Riemer, 2013).

(II) Berenike-Coptos (Quft) Road

The trip from Berenike to Coptos took about twelve days. Along the desert track, the Greeks, and particularly the Romans, built thick-walled stations at intervals of less than one day's march (Sampsell, 2014; Sidebotham, Hense, and Nouwens, 2008; Hekster, and Kaizert, 2011). The road to Berenike departed from Edfu, which is some 150 km south of Koptos, while the "Small Apollinopolis", Qus, is about 15 km south of Koptos. Strabo must have imagined the roads like sketched in (Figure 18). The southern part of the road to Berenike remained the same and the route to Myos Hormos was unchanged, but a stretch (Forster, and Riemer, 2013).

Figure (18): The roads from Koptos and Apollinopolis Magna to Myos Hormos and Berenike:



(A) According to Strabo - (B) Reality in Ptolemaic times - (C) In Roman times, from: (Forster, and Riemer, 2013)

(III) Another route appears to have linked Berenike with Syene (Aswan), though this Ptolemaic road looks to have been all but abandoned by the Roman period (Thomas, 2009).

The excavations and the archaeological remains of Berenike port

At Berenike have excavated several temples, sanctuaries, and a church. It was also found inscriptions indicating the existence of other cults whose buildings now lie silently somewhere amid the buried ruins of the city (Sidebotham, Hense, and Nouwens, 2008).

The temple of the town has inscriptions honoring Tiberius and perhaps Marcus Aurelius. It flourished in the first century AD (Alston, 1995). It was assumed that this temple, or a predecessor, existed here after the foundation of Berenike by Ptolemy II Philadelphus in about 275 BC.

The best known temple at Berenike is undoubtedly that dedicated to Serapis and other deities (Figure 19). Built for the most part of brilliant white locally obtainable gypsum, the temple blocks that compose the walls were joined together with clamps made of wood. This structure has fared badly over the centuries (Sidebotham, Hense, and Nouwens, 2008).

Figure (19): The Serapis temple at Berenike



from: (Sidebotham, Hense, and Nouwens, 2008)

Only about eighty meters north of the Serapis temple the excavations uncovered another small, perhaps vaulted, cult center with a single narrow entrance at its eastern end. Unlike the sanctuary with the inscriptions and remains of the two bronze statues, this one had a short life at the turn of the fourth and fifth centuries AD. During two phases this shrine honored some deity whose identity remains uncertain; though this may have been a mystery cult (Sidebotham, Hense, and Nouwens, 2008) (Figure 20).

Figure (20): Small sanctuary north of the Serapis temple at Berenike, possibly used for a mystery cult. Scale = fifty centimeters



from: (Sidebotham, Hense, and Nouwens, 2008)

At Berenike, a late Roman era cemetery found during the excavations in winter 2000 – 2001, this necropolis lay at the extreme northwestern edge of the city flanking the road that led to the Nile (Figure 21). Inside the variously shaped mausoleum had been placed, in some instances, wooden coffins fastened together using iron and copper alloy nails (Sidebotham, Hense, and Nouwens, 2008) (Figure 22).

Figure (21): Berenike, plan with late Roman era cemeteries in and around the city



from: (Sidebotham, Hense, and Nouwens, 2008)

Figure (22): Berenike, late Roman cemetery with bones scattered by looters inside mausoleum. Scale = twenty centimeters



from: (Sidebotham, Hense, and Nouwens, 2008)

(VI) Myos Hormos "Quseir el-Qadim" Port

For the location of Quseir el-Qadim port, Quseir al-Qadim is the site of an ancient port eight km north of the modern town of Quseir on the Red Sea in Egypt (Whitcomb and Johnson, 1979), Myos Hormos was approximately 180 kilometers distant from Coptos and it took six or seven days to make this journey (McLaughlin, 2010; Blue, 2007) , an ancient settlement of major international significance (Moser, Glazier, Phillips, El Nemr, Mousa, Aiesh, Richardson, Conner and Seymour, 2002) (Figure.23).

Figure (23): Aerial view of the site of Quseir al-Qadim



from: (Moser, Glazier, Phillips, El Nemr, Mousa, Aiesh, Richardson, Conner and Seymour, 2002)

The port is located at the end of the Wadi Hammamat which connects the Luxor region of the Nile valley with the Red Sea. The port of Quseir al-Qadim lies at the head of a bay on one arm of a coral lagoon. The mound itself is approximately ten hectares in area (Figures 24-25) (Whitcomb and Johnson, 1979).

Figure (24): Site of Quseir al-Qadim and the silted lagoon



from: (Blue, 2007)

Figure (25): View of Quseir al-Qadim and the silted lagoon taken from the north of the site from a hot-air balloon



from: (Blue, 2007)

The site mound is about 10 hectares, or 25 acres, in area and sits at the head of a coral bay that once served as the harbor (Burke, 2004). Myos Hormos located some 600 kilometers south of Cairo, 150 kilometers from the banks of the Nile (Tully, Gemma, 2009; Whitcomb and Johnson, 1979; Whitcomb and Johnson, 1982; Thomas, 2009; Donnelly, 2004) (Figure 26).

Figure (26): Location of Quseir al-Qadim and Berenike (shading indicating relief)



from: (Blue, 2007; Tully, Gemma, 2009)

Myos Hormos is made up of two distinct geographical regions, the settlement and the harbor. This can be subdivided into a number of discrete regions based on geographical proximity and shared architectural features or function. For this reason descriptions of the trenches will be discussed within these areas: (1) The central settlement, including a number of substantial two store mudbrick structures and sebakh dumps – (2) The harbor, including various harbor facilities and industrial areas – (3) The western ridge overlooking the harbor, that includes a series of poorly constructed single store mudbrick structures with adjacent sebakh dumps (Thomas, 2009; Blue, 2007)

Myos Hormos was previously thought also to be at the ancient site of "Abu Sha'ar". Casson identifies it as such based on Pliny's remark that there was a spring nearby, and that "Abu Sha'ar" is the only locale "blessed with good water". But, the excavations at "Abu Sha'ar" have not produced either Ptolemaic or early Roman material. This is despite his own notice that the *Periplus* states that the distance between Myos Hormos and Berenike is 1800 stades, which would put Abu Sha'ar too far north at a distance of about 2300 stades. The site was the main port of trade during the days of Strabo, and he describes its location as follows: "Then one comes to Myus Harbour, which is also called Aphrodite's Harbour, it is a large harbor with a winding entrance, off which lie three islands: two of these are densely shaded with olive trees, while the third is less so and is full of guineafowls." (Donnelly, 2004; Burke, 2004).

For the history of Quseir el-Qadim port, One of the great trading centers of the ancient world, the port of Myos Hormos (Moser, Glazier, Phillips, El Nemr, Mousa, Aiesh, Richardson, Conner and Seymour, 2002). It is clear from historical sources that Myos Hormos was a major Roman trading port: Strabo, for example, states that "Now 120 ships sail from Myos Hormos to India (Blue, 2007).

Archaeological remains were first recorded at Quseir al-Qadim in the 1820's. John Gardner Wilkinson was the first to produce a sketch map of the site and then his contemporary James Burton visited in 1822-4. In the early 20th century, Arthur Weigall visited in 1909, followed by G.W. Murray who collected antiquities from the site in 1921 and 1930 (Thomas, 2009; Sidebotham, 1986).

The site at Quseir al-Qadim was excavated by the University of Chicago between 1979 and 1982 and the University of Southampton between 1999 and 2003. In 1993 David Peacock proposed that the site was ancient Myos Hormos, and the University of Southampton excavations have since corroborated this, in particularly by a loan agreement on a papyrus that refers to "here at Myos Hormos" (Tomber, 2012; Thomas, 2009; Nappo, 2010; Blue, 2007).

The site has an archaeological sequence from the late 1st century BC through at least the mid-3rd century AD, but is likely to have an earlier foundation which was not reached in excavation

due to extensive waterlogged deposits (Tomber, 2012), large scale excavations of the area begun in 1999 have confirmed the status of the site in antiquity, with a papyrus contract dated 25 March AD 93 giving the full name of the site as " Myos Hormos on the Erythraean Sea" (Moser, Glazier, Phillips, El Nemr, Mousa, Aiesh, Richardson, Conner, and Seymour, 2002) (Figure 27). Texts on Roman period artifacts excavated at Quseir are in Latin, Greek, Demotic (Egyptian), South Arabian, and Tamil (in Brahmi script, written in southern India) (Bard, 2012).

Figure (27): The archaeological site of Quseir al-Qadim



from: (Tully, 2009)

Myos Hormos and Berenice were "designated" or "restricted" ports (*apodeidegmenos hormos*), according to the *Periplus*. The traditional identification of Quseir al-Qadim with the ancient port of *Leukos Limen* led Sidebotham to comment, "the discovery of the import-export trade between South India, South Arabia and Egypt at *Leukos Limen* proves, however, that the Erythraean Sea trade was not confined to "Berenice and Myos Hormos". Alternatively, the *Periplus* could be used to argue that Quseir al-Qadim must be Myos Hormos and not *Leukos Limen*. Indeed, Redde and Golvin have shown clearly that the distance between Berenice and Myos Hormos in the *Periplus* (1800 stades) is the exact distance from Ras Banas (Berenice) to Quseir al-Qadim (Donald, 1996; Tully, 2009; Blue, 2007; Liloyd, 2010)

The foundation of Myos Hormos by Ptolemy II Philadelphus (285-246 BC) has been widely assumed, yet there is no direct evidence. The attribution is implied from the tradition of Agatharchides, written over 150 years later and available only in quotations (Diodorus, Strabo, and Photius) (Donald, 1996; Thomas, 2009; Tully, 2009)

Myos Hormos, is first mentioned by Agatharchides, in the second century BC., where the Southampton University team excavated a late first century BC to mid third century AD port settlement (Thomas, 2009). As Burstein has pointed out, the name implies an unofficial, non-royal foundation: the other (Donald, 1996), ports of Ptolemy II are all named for his female relatives. The text of Agatharchides, as found in Photius, states that a later name for the port was Aphrodite's harbor (Donald, 1996; Hekster and Kaizert, 2011). The knowledge of the official post – system along the Koptos- Myos Hormos road has recently been much advanced by the publication of the ostraca (Forster, and Riemer, 2013; Sidebotham, Hense, and Nouwens, 2008).

For the importance of Quseir el-Qadim port, During the Ptolemaic and Roman periods, too, trade with the spice lands (in this case south Arabia, Africa, and India) via the Red Sea was an important element in Egyptian foreign trade (Whitcomb and Johnson, 1979). Throughout the early millennium AD Roman commerce with the wider Indian Ocean was funneled through the ports of Myos Hormos, Berenike and Clysma, located on the Egyptian coast in the northern third of the Red Sea (Starkey, Starkey and Wilkinson, 2007).

Some indication of the scale of the Roman involvement in the wider trade networks of the Indian Ocean can be found in Strabo's remark that "now one hundred and twenty ships sail from Myos Hormos to India" (Starkey, Starkey and Wilkinson, 2007; Sidebotham, Hense, and Nouwens, 2008; Nappo, 2010).

Both Myos Hormos and Berenike were founded exclusively to facilitate trade, initially with Africa for the import of elephants to be used by the military, and later across the Indian Ocean (Tomber, 2012; Tully, 2009).

The combined Myos Hormos excavations have revealed distinct changes in the level and form of trade that passed through this port. The earliest period (late first century BC to mid first century AD) suggests a significant period of trade, with Italian and Egyptian amphorae well represented. There was a significant use of the harbor facilities in most areas during the second century AD, though reduced use and subsequent abandonment of other areas at this time. Myos Hormos was abandoned during the period of economic and political difficulties faced by the Roman Empire in the mid third century AD (Thomas, 2009; Blue, 2007).

The harbor area consisted of a substantial hard surface deposit constructed from amphorae and pottery and redeposit refuse including a range of artefacts and animal bones. On top of this surface was a stone sea defence that protected buildings behind from flooding. The harbor consisted of a shallow sloping surface constructed against rocky bluffs from complete and damaged amphorae (Thomas, 2009).

The central settlement of Myos Hormos consists of a series of large mudbrick structures aligned approximately north, northwest to south, southeast, although this was not a rigidly enforced street plan (Thomas, 2009). Excavations at Quseir al-Qadim produced a large quantity of Roman cloth, perhaps destined for export. The presence of glass slag at Quseir indicates the existence of glass manufacturing at the port. Excavations at Quseir discovered large quantities of glass made at other Mediterranean cities. This, too, may have been destined for export from Quseir to other Erythraean Sea lands or used by inhabitants of the port itself (Sidebotham, 1986).

Most of the remains date to the first to third centuries AD, although some trenches have supplied late Ptolemaic remains. Excavations are still ongoing and the entire site has not yet been fully investigated (Donnelly, 2004).

The first is a letter from Ioulios Maximos to Gaios Apolinarios translated as follows (Figure 28): "Ioulios Maximos to his brother Gaios Apolinarios, many greetings, I want you to know that the boats did not come (back) to Myos Hormos while I was there. I was going to send you the fish. So don't reproach me brother, for you know what duty is. If it is possible for me to go, I shall see to it. Write me what you want. Greet those who are friends with you. For as far as I can see, we stay here a few days. Take care." (Donnelly, 2004).

The second is one of two letters from a woman, Serapis to Ammonios (Figure 29), who she addresses as her father as following: "Serapis to her father and lord Ammonios, many greetings. I do obeisance on your behalf to the lady Philotera. I received from Nestereus 6 loaves of bread. If I come to Myos Hormos, as I announced to you, I shall send you a jar of fish sauce with the first donkeys. For I care as much about you as if you were my own father. And if I find the linen for you I shall buy it. If you have a drinking cup, send it to me. My brother salutes you. Don't forget to send me the scalpel. Receive I jar (and) write to me about yourself, Greet Proklos" (Donnelly, 2004; Nappo, 2010). Both letters discuss a trip to, and a departure from Myos Hormos. I only include the one translation here for its discussion on fish sauce.

Figure (28): Letter of Joulios Maximos – Omax 175; 2nd cent A.D.



from: (Donnelly, D., 2004)

Figure (29): Letter from Serapis to Ammonios – Omax 279+467; 2nd cent A.D



from: (Donnelly, 2004)

Pottery recovered from the site includes a wide range of vessels imported from throughout the Roman world. Plant remains recovered at Quseir from the Roman period levels produced evidence of at least three imports of Indian foodstuffs. Quseir al-Qadim has an excellent assortment of maritime artifacts preserved which help us determine not only the harbor and possibly repair facilities at Myos Hormos. Wood and metal objects have been excavated at Quseir that illustrate the various components required by ships (Donnelly, 2004; McLaughlin, 2010; Bowman, 1986).

Like all the other coastal cities, ancient Berenike and Quseir were completely dependent on towns in the Nile Valley to supply them with food; only fish could be obtained on the coast. Water supplies were absent along the coast, so towns relied on wells dug in wadis up to several kilometers inland. Ground water collected in the wells and was carried to the coast by pack animals (Sampsell, 2003).

For the Roads of Quseir el-Qadim port, the road led from Quseir al-Qadim to Quft (Coptos) on the Nile via the wadi Hammamat (Sidebotham, Hense, and Nouwens, 2008; Lioyd, 2010). At all periods, the track from Qift to Quseir was one of the busiest of the Eastern Desert routes, since it involved traffic to mines and quarries in the desert interior as well as to the Red Sea coast. This 175 km trip took about five days (Sampsell, 2003).

Along the road from Koptos to Myos Hormos there is a series of small towers that have puzzled travelers for a long time, there were at least eight stations (Sampsell, 2003). Journeys from Coptos to these towns were made by camel, carrying trade goods and supplies across the busy desert routes (McLaughlin, 2010). The routes sometimes detoured from a direct line to take advantage of wells or to access mines (Sampsell, 2003).

The excavations and the archaeological remains of Myos Hormos port

The excavators thought that the site could have had a Ptolemaic foundation but was not an important site until the Roman period (Moser et al., 2000) (Figures 30-31).

Figure (30): Plan of the Roman remains at Quseir al-Qadim



from: (Donald, 1996)

Figure (31): Remains of Myos Hormos



from: (Sidebotham, Hense, and Nouwens, 2008)

Large scale excavations of the area begun in 1999 have confirmed the status of the site in antiquity (Moser et al., 2000). In 2000, the University of Southampton excavation found a remarkable Greek papyrus. It is reconstructed from three pieces, but only the upper part of the text, a loan of money, is preserved (Figure 32). Peacock notes the document starts with the mention of the place where the contract has been drawn up: "In Myos Hormos at the Red Sea, followed by the date: the twelfth year of Emperor Caesar Domitianus Augustus, the 29th of the month Phamenoth, which corresponds to March 25th, 93 AD" (Donnelly, 2004).

Figure (32): Papyrus containing name Myos Hormos



from: (Donnelly, 2004)

Archaeologists from the University of Southampton excavating at Myos Hormos in 1999-2003 believe they may have unearthed a temple or synagogue, though they are very tentative about this identification (Sidebotham, Hense, and Nouwens, 2008). Among the more exciting finds are a large number of amphorae, located upon what may have been the shore's edge (Figure 33), and a coin hoard (Moser et al., 2000).

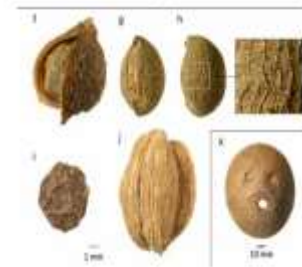
Figure (33): A selection of the amphorae pit



from: ((Moser et al., 2000).)

Many thousands of seeds, fruits, grains and other botanical remains were recovered at each excavation. Pharmacopoeia and other documents, which describe their use in medicine, ritual and cuisine such as black pepper, cardamom and coconuts (Der Veen, and Morales, 2014) (Figure 34).

Figure (34): Archaeobotanical remains of some of the spices and other imports found at Quseir al-Qadim, Egypt



from: (Der Veen and Morales, 2014)

At the port of Quseir al-Qadim (ancient Myos Hormos) a large multiple roomed area, excavated by the American team in the late 1970s and early 1980s and dubbed the Indian quarter (Figure. 35) , preserved evidence suggesting that people often lived, manufactured, and sold wares or conducted their business in the same location (Sidebotham, Hense, and Nouwens, 2008).

Figure (35): The large multiple roomed area at the port of Quseir al-Qadim, dubbed the "Indian Quarter". Scale = one meter



from: (Sidebotham, Hense, and Nouwens, 2008)

In conclusion, this research had several points that studied the archaeological sides of the ports of the Red Sea in Egypt. This research indicated that Egypt played a vital role through Greek and Roman period in the commerce of the eastern desert of Egypt for example; in Roman period highly desirable trade goods from the east were shipped from southern India to Rome via Egypt.

The most important of results and recommendations of the research are:

- (1) The extent of the influence of the red sea ports on the movement of trade through Ptolemaic and Roman period.
- (2) The region of the eastern desert in Egypt is rich in stone and minerals and was important for the commercial traffic between the Nile valley and the red sea
- (3) In Roman period, Egypt's eastern desert was economically important for stone and minerals, especially granite such as Mons Claudianus and Mons Porphyrites.
- (4) Under Roman authority Egypt's trade with the distant east increased, not only in scale and intensity, but also in geographical scope.

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