



## **BYZANTINE MARITIME TRADE IN SOUTHERN JORDAN: THE EVIDENCE FROM PORT OF AILA ('AQABA)**

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### **ABSTRACT**

Eusebius of Caesarea, in (Onomasticon) said that: "Ailath (Aila) is situated at the extremity of Palestine between the southern desert and the Red Sea where cargo was transported by ship from both Egypt and India".

There is no doubt that port of Aila- 'Aqaba was important for the sea trade during the Byzantine Period and ancient times. Aila acquired significance in the Byzantine Empire commerce and seafaring according to the information derived from the Byzantine historians, documents and pilgrim's archaeological excavations.

This paper focuses on Byzantine Maritime Trade in port of Aila during the period between the fourth and seventh centuries A.D, its importance in the flourishing of trade of southern Jordan, and its relations with other major trade centers such as Gaza, Alexandria and Ethiopia.

It appears that port of Aila played a major role in the economy of Byzantine Empire and international trade as attested in the accounts of historians, pilgrims who visited the area during this period, and archaeological excavations which revealed that Aila was at least a transit point and perhaps even a production site for fish sauce or related products in the Byzantine period.

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**KEYWORDS:** Aila, Aqaba, Byzantine, Southern Jordan, Maritime Trade.

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## 1. LOCATION AND CLIMATE

Aila ('Aqaba) located in the far south-western corner of Jordan; the city lies approximately 320km south of the capital city of Amman (Fig.1). Aqaba is the only port city of the present-day country of Jordan and provide invaluable access to the Red Sea. It lies at the junction of both land and sea routs from Asia, Africa and Europe. (Whitcomb,1988). The city surrounded by desert –Sinai to the west, Negev to the north, and Hisma in southern Jordan and northwestern Saudi Arabia to the north-east and east. The location of Aila was also of a geopolitical importance. Control of Aila meant the ability to move freely from the northern Hejaz towards southern Palestine.

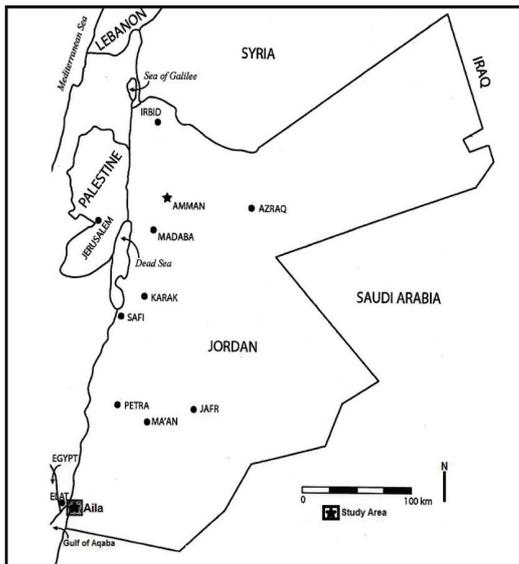


Fig. 1 Location map of the study area

The synoptic climatology of Jordan is part of the climatology of the eastern Mediterranean basin (Shehadeh, 1985), and 'Aqaba is influenced by a relatively wet Mediterranean climate to the northwest and a hot, arid climate to the south and east. Temperature often exceeds 40° C in the summer months. The average annual rainfall in Aqaba is less than 50 mm (Shehadeh, 1985).

## 2. MODERN AND ANCIENT AUTHORS

Information about the history of Aila comes from a verity of sources. These include the ancient Greek, Jewish, Byzantine authors. Modern travel accounts of the 19<sup>th</sup> and early 20<sup>th</sup> centuries and from evidence of archaeological excavations were conducted of the past century. A variety of variant spellings from these sources is attested for the site, including Laeanites, Aelanitic, Laeanitae, Laeana, Aelana, Laeanitic, Aelanitic, and Ayla<sup>1</sup> (Parker, 1997, MacDonald, 2000, Nasarat, 2009). In the Byzantine period this area belonged to the administrative unit of the province of Palaestina Tertia, until the Muslim invasion in ca. AD 630. (Fiema, 1991)

### 2.1 Greek Authors

The first historical accounts of the Aila occur in the writings of unknown author in his book (*The Periplus on the Erythraean Sea*) by account of Agatharchides of Cnidus (145-132 B.C) who mentioned it as: "... Laeanites Gulf, around which there are many villages of the so –called Nabataean Arabs" (Brown,1973). Artemidorus of Ephesus (103 B.C.) is another classical sources mentioning Aila, he inform us of the palm groves located inland from the Aelanitic Gulf (Warrington and Hornblower, 1996).

Pliny in his *Natural History* in the 1<sup>st</sup> century inform us that the Gulf has many names, he said that 'then there is a bay running far inland on which live the Laenitae, who have given it their name. there capital is Agra, and on the bay is Laeana, or as others call it Aelana, for the name of the bay itself has been written by our people as Laeanitic, and by others as Aelanitic, while Artemidorus gives it as Aelanitic and Juba as Laeanitic" (Rackham et al, 1962). In an other account he mentions that "The two gulf of the Red Sea where it converges on Egypt are called the Gulf of Suez and the *Sinus Aelanticus* between the two towns of Aelana and Gaza, which is on the Mediterranean, there is a space of 150

miles". (Rackham et al, 1962)

The Latin word used by Pliny to describe Aila (Oppidum) is usually translated as "Town", this is significant because it suggests that the site was of a rather modest size, otherwise he would have likely referred to it as *urbs*, which would imply a major urban center like Rome, complete with all of its administrative components, such as, a senate house (*bouleuterion*) (Dolinka, 2003).

Diodorus Siculus in the late 1st century provided further information about the inhabitants of the "Laenites Gulf." After one has sailed past this country the Laeanites Gulf comes next, where many inhabited villages of Arabs exist, who are known as Nabataeans, this tribe occupies a large part of the coast (Geer, 1961). Strabo in the early 1st century in his Geography provides an additional account in which he states that the Aelanitic Gulf and Nabataeans is a "country with a large population and well supplied with pasturage" (Jones, 1930), and he provided more information about this port when he describes the Nabataeans as middlemen in aromatics trade. Strabo states that "Cattabania produces frankincense, and Chateramotitis produces myrrh...both these and other aromatics are bartered to merchants. These arrive there in 70 days from Aelana with the Minaeans ...but the Gerrhaeans arrive at Chateramotitis in 40 days" (Jones, 1930).

Strabo also mentions port of Aila when he describes the road run between the port of Gaza on the Mediterranean Sea and Gulf of Aela, "Thence (from Gaza) there is said to be an overland passage of 1.260 *Stadia*<sup>2</sup> to Aela, a city (*polis*) situated near the head of the Arabian Gulf. This head consists of two recesses: one extending into the region near Arabia and Gaza which is called Aelanites, after the city situated on it" (Jones, 1930). This description from both Diodorus Siculus and Strabo suggest that Aila was originally a Nabataean settlement, and also suggest that Aila was a sizable settlement by the early first century. This passage pro-

vides important information, that Aila was a polis, which implies an urban community. It is interesting to note that although Strabo does mention an Aila-Gaza route, he makes no mention of maritime activities at Aila (Dolinka, 2003).

Regarding the geographical books the geographer Claudius Ptolemy who wrote ca 150 A.D. mentioned Aila as "the village (*κώμη*) of Elana, which is located in the angle of the bay of this name..." (Nobble, 1932). From these literary sources we can reconstruct how this "harbour system" worked during the Roman Period, according to Ptolemy the ports of the Red Sea from north to south were Clysma, Philoterias, Myos Hormos, Leukos Limen, Berenike, Aila and Leuke Kome (Nobble, 1932) (Fig.2)

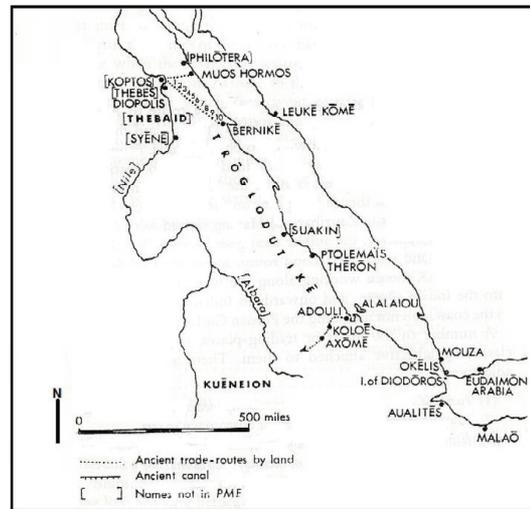


Fig. 2. The Red Sea Ports (after Huntinfgord,1980)

## 2.2 Jewish Author

Another important source for the history of Aila and its name is from Jewish historian Flavius Josephus, who wrote in the late 1st century A.D. he said that "the king (Solomon) also built many ships in the Egyptian gulf of the Red Sea at a certain place called Gaison-gable not far from the city of Ailana (*πόλις*), which is now called Berenike" (Thomas, 1998).

### 2.3 Roman (Byzantine) authors and map

From Roman and Byzantine sources we can derive a lot of information about Aila and it is important during this period the Peutinger Table (Fig.3).

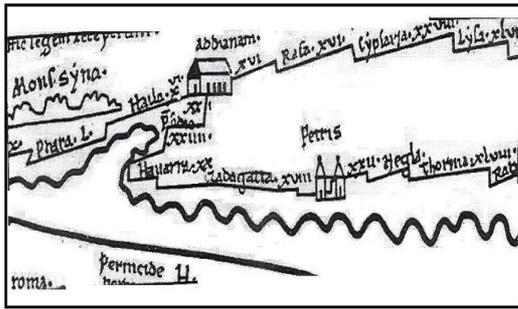


Fig. 3. Segmentum IX of the Tabula Peutingeriana showing the location of Aila (Dolinka, 2003)

A fourth road map of Roman Empire, locates Aila fifty Roman miles<sup>3</sup> from Phara(n), that is, the Feiran oasis in Wadi Feiran in south Sinai, and sixteen from Dianam. (Webr, 1976, Finkelstein, 1979). The Peutinger Table was not a military map, as there are no military garrisons named on it, and has been suggested that it may have been deigned for use by the *cursus publicus*, the Roman imperial postal service (Dolinka, 2003). The city of Aila appears with the name of Haila where two roads met: the first one comes from Bosra and the second one emanates from Jerusalem (Al-Salameen, 2004)

The *Notitia Dignitatum* (Or 34.30) is a list of all high offices in the eastern and western parts of the Roman Empire, dated to the end of the fourth and the end of the fifth centuries (Peters, 1984, Parker, 1982). From this source we learn that the *Praefecuts legionis decimae Fretensis* (the 10th Legion Fretensis) was stationed at Aila during the late 4<sup>th</sup> / early 5<sup>th</sup> century A. D. (Mayerson, 1963). This legion was the only garrison mentioned clearly by name in the *Onomasticon* (Isaac, 1996). The byzantine historian Eusebius of Caesarea (4<sup>th</sup> century) states that the *Legion 10<sup>th</sup> Fretensis* stationed at Aila in

the late 3<sup>rd</sup> / early 4<sup>th</sup> century A.D. shortly after the Roman brought the legion from Jerusalem to stay in Aila (Isaac, 1996). The presence of the Roman legion there reinforces the strategic importance and economic value of the site and supports the notion that by ca. A.D. 300, Aila was certainly more than a "town" (Dolinka, 2003). It is reasonable to associate the Byzantine fortifications with the presence of 10<sup>th</sup> Legion Fretensis, based at Aila throughout the fourth century and presumably into the fifth century (Parker, 1996).

Procopius of Caesarea gave another account relation to Aila in sixth century A.D. in which he states that "for the sea which one traverses beyond this point as far as the shore and the city of Aelas, has received the name of the Arabian gulf, in as much as, the country which extends from her to the limits of the city of Gaza used to be called in olden times Arabia, since the king of the Arabs had this palace in early times in the city of Petra" (William, 1904)

The information provided by the classical sources sheds light on ancient port at Aila during the ancient times, but there remain gaps in our information, especially concerning changes in the size and population of Aila from the 1<sup>st</sup> century B.C. to the middle of the 2<sup>nd</sup> century A.D. (Dolinka, 2003)

### 3. HISTORY OF HUMAN SETTLEMENT

Archaeological excavations in Aqaba has shown an early occupation to the prehistoric periods (Frank, 1934; Glueck 1935). There is clear evidence of human activity in the city in the prehistoric era, especially the Middle Paleolithic, Pre-pottery Neolithic, and Chalcolithic periods (4500 B.C-3200 B.C.) (Parker, 1996).

Occupation is at Tell Al- Maqass<sup>4</sup> and its associated sites, dated to the mid-fourth, millennium B.C. and now ca 4 km north of the present coastline. Al- Maqass was identified as a metal manufacturing workshop from the second half of the fourth millennium B.C. (Zayadine, 1994, Khalil, 1985) In

the Iron II and Persian periods the only known settlements west at Tell al-Khalayfi<sup>5</sup>, an archeological site located ac 500 m north of the modern shoreline of Aqaba. Trade via the red sea was certainly thriving in his period (Parker,1996). Glueck followed Frank who first identified Tell al-Khalayfi in Aqaba with Ezion Geber of the bible which was an important outlet during the Solomonic Period. The Old Testament mentions that "King Solomon also built ships at Ezion Geber, which is near the Elath in Edom, on the shore of the Red Sea" (I Kings 9: 26). But the identification of the site with Ezion Geber becomes doubtful because the archaeological remains uncovered at the site cannot be dated to the 10<sup>th</sup> century B.C. (Zayadine, 1994). Excavations in these sites revealed a series of successive settlements between the 4<sup>th</sup> and 8<sup>th</sup> centuries (Glueck, 1938, Glueck, 1965).

Patrico determined that the site was not funded prior to the eighth century B.C. as Gluck had originally postulated, but that was likely established by the Edomites<sup>6</sup>, a group of people who typically inhabited the Negev Desert (eighth – sixth century B.C.) (Allison, 2007; Zayadine, 1994). During the Hellenistic period and after the division of Alexander's legacy among his heirs it fell under Ptolemaic rule until 198 B.C., when it passed under the dominion of the Seleucids who gained complete authority in Palestine at the Battle of Panion (Parker 2000; Al-Salameen, 2003).

In the 6<sup>th</sup> century B.C. the Nabataeans gradually replaced the Edomites, and settled the region. In 106 A.D. Trajan's annexation Nabataea as the Roman Province of Arabia brought Aila under direct Roman rule. It is impossible as yet to evaluate the impact of the Roman annexation of A.D. 106 upon Aila. Continuity of occupation from the early Roman to the Late Roman periods demonstrated in some area of excavations (Parker, 1996).

The *via nova Traiana*, which extended through Arabia from the borders of the

Roman Province of Syria to its southern terminus at Aila, was completed between A.D 111-114 (Parker, 1997) Two milestones of the *via nova Traiana* have recently been discovered at Aila itself (MacAdam, 1989). The construction of the *via nova Traiana* was designed as a strategic as well as an administrative and commercial project. The completion of the *via nova Traiana* further south to Aila highlights the economic importance of the city (Abudanh, 2006).

Here, we must to say that the completion of the *Vai Nova Traina* in 111-114 with its attendant forts and garrisons probably improved both physical infrastructure and security for commercial traffic (Parker, 1996)

Around the third-fourth century A.D. Christianity appeared in Aila<sup>7</sup>, the first known bishop, Petrus, participated in the council of Nicea in 325 A.D, and the bishop Beryllus attended the council of Chalcedon in 451 A.D. (Zayadine, 1994, Nasarat 2009). The presence of another Christian monument in the city is now proved by a lintel that was discovered near the northeastern tower of Islamic Ayla (Zayadine 1994). Meloy noted that the mound was rich in surface artifacts, including pottery and glass sherds and ceramic slag. Most of the surface pottery was Byzantine, especially fifth sixth centuries A.D. (Meloy, 1991). Thus it was hoped that excavation of this mound would provide evidence of Byzantine Aila.

Thomas Parker conducted an extensive archaeological excavation at Aila from 1994-2002 Known as the Roman Aqaba Project, in which he excavated many sites dated to the Nabataeans/ Roman, and Byzantine periods within the Circular Area of Aqaba and in the surrounding area and definitively located the ancient city of Aila (Fig 2) (Parker, 1996). The archaeological evidence confirms the impression gained from the literary sources that the port of Aila was particularly active during Byzantine period.

Recent archaeological excavations conducted by Whitcomb in diverse regions at Aila revealed that the city witnessed a

human settlement during Nabataean, Roman and Byzantine periods (Whitcomb, 1995). Preliminary examination of the pottery collected suggests continues occupation from the Nabataean, Roman, and Byzantine periods. (Whitcomb, 1993). The Umayyad period is also well represented. There is no doubt that Aila served as an important commercial center during the early Islamic period (Magness, 1998).

#### 4. AILA MARITIME TRADE

The main entrepôts of South Arabian and Ethiopian trade in the Byzantine period were the major maritime harbors in the North, preliminary Aila, and Clysma. Aila had been a trans-shipment point for eastern goods in the preceding periods, primarily for those disembarked in Leuce Come (Fiema, 1991). It appears in historical sources as a major maritime station. Eusebius was aware that Aila was a port of navigation to both India and Egypt (Fiema, 1991).

The geographical position of port of Aila at the junction of roads that led from Leuke Kome and Egypt served the need of travelers and caravans for rest and security before the continuing their journey through desert. As a port at the head of gulf that faced the Red Sea, coastal vassals could engage in traffic with African and Arabian trading center on the Red Sea, venturesome seagoing merchant vassals could pursue trade with ports on the Indian Ocean (Mayerson, 1996)

It is worth mentioning that economic consideration played a role in promoting maritime commerce. Given that it was much cheaper and lower cost in antiquity to ship goods in bulk of sea than it was to transport them overland (Sidebotham, 1989). Aila was one of the important sea cities like Gaza, Alexandria and Antioch during the Byzantine period.

It is apparent from the literary sources that the Aila was an important commercial center and outlet at the head of the Red Sea, especially during the period under discus-

sion and previous periods. Our knowledge of these maritime trade relied on the testimony of texts, it has since benefited from the contributions of archaeological excavations. Recent analysis (using neutron activation analysis) of a garum (the ubiquitous fish-sauce of classical antiquity) container from an early Byzantine context from Ez-Zantur at Petra revealed that the fish were from the Red Sea (Parker, 2000); all this suggests that Aila was at least a transit point and perhaps even a production site for fish-sauce or related products in the Roman and Byzantine periods (Parker, 2000)

In 312 B.C Ptolemy I occupied Syria and Palestine with eastern Jordan. Thus Aila was incorporated into the realm in the Ptolemaic Kingdom until 198 B.C. when Syria was conquered by the Seleucid Antiochus II (Ghawanmeh, 1986). Ptolemy II displayed his interest in the coast of the Arabian Peninsula by dispatching Ariston to carry out a scouting mission in the region. The principal aim of this mission was to restore the maritime route between Aila and Aden (Ghawanmeh, 1986; Bartlett, 1972). The Ptolemies had commercial interests in both southern and northern Arabia; they used to import various commodities from south Arabia, Africa and India through the Nabataeans who controlled the overland trade routes (Rostovtzeff, 1932, Al-Salameen, 2003).

The Ptolemies had desired to be a major commercial power in the Mediterranean world in the last century B.C. They could never hope to monopolize all the trade routes concerning the Mediterranean basin with lands to the east. They were never more than a regional power in the eastern Mediterranean and were constantly in competition with other regional and local powers like the Seleucids and the Nabataeans (Sidebotham, 1989).

According to Agatharchides of Cnidus, as quoted by Diodorus of Sicily, the policy of the Ptolemies invited the reaction of the Nabataeans, and encouraged them to

threaten any notion which might effect their revenues. They adopted a policy of piracy in the Red Sea against their neighbors, the Ptolemies. The same author refers to the piratical activities of the Nabataeans in the Red Sea: "*Now in ancient times these men – the Nabataeans- observed justice and were content with food which they received from their flocks, but later, after the kings of Alexandria had made the way of the sea navigable for their merchants, these Arabs not only attacked the shipwrecked, but fitting out pirate ships preyed on the voyagers...*". (Geer, 1961).

The attacks can be understood in relation to the commercial competition between the Nabataeans carveneers and Ptolemaic ship owners. It could at the same time be the response of the Petra traders to the occupation of Aila by Ptolemies who renamed Berenike (Tarn, 1929; Zayadine, 1994).

Berenike the southern most of the Egyptian Red Sea ports, was probably the largest and most important (Jones, 1930), at least in the first century B.C. to first-second century A.D. Ptolemy II founded the port in the early third century B.C and named it after his mother (Sidebotham, 1989)

Diodorus of Sicily, tells us also that the Nabataeans, "*... lead a life of brigandage and overrunning a large part of the neighboring territory they pillage it. Some had penetrated to the Mediterranean coast where they indulged in piracy, profitably attacking the merchant ships of Ptolemaic Egypt*" (Geer, 1961).

From these accounts we can conclude that the Nabataeans were equally at home on the seas as they were in the desert. However, not only did they engage in piracy, they also engaged in merchant trade which was considered near-piracy by those buying and selling to merchants.

Strabo also given another account about Nabataeans activities in the Red Sea and Aila, he says: "*these Nabataeans formerly lived in a peaceful life, but later , by means of rafts went to plundering the vassals of the people sailing from Egypt*" (Jones, 1930). Also mentioned that Aila was an important transfer

point for goods moving between the land and sea trade routes (Jones, 1930).

At the time of Nabataean King Malichus II (40-70 A.D) the port of Aila was occupied by the Nabataeans, as can be deduced from tow graffiti from Wadi Mukattab in the Sinai and Hegra- Madai'an Saleh. The first one (CIS 1205) reads: "*Peace Abdulge son of Wa'ilu who resides in Aylat*". Both names are well attested in the Nabataeans Onomasticon, and the verb "*mr* (resides)" confirms that this merchant was citizen of Aila (Zayadine, 1994). The other short inscription commemorates W'ailuson of Qashru who is from Aylat (Zayadine, 1994). Both graffiti are good testimony to a Nabataeans presence in this port in the first century A.D.

We have sufficient evidence to suggest prosperous city during the Nabataeans period, since most of the commodities either exported or imported may will have passed through it. Recent discoveries at the Aila have yielded fine imported tables wares from the eastern Mediterranean (Parker, 1997). Aila was flourishing Nabataean settlement by the 1<sup>st</sup> century B.C. A wide variety of trade goods, such as wine, oil, glass, metal, and apparently passed through the port in this period (Parker, 2000).

The Nabataean Government probably issued edicts to protect its local production and to prevent merchants from monopolizing trade in some rare commodities, especially during their trade in Port of Aila. No evidence is available from Nabataea to support this (Al- Salameen, 2004).

Our influential sources about the commodities during Nabataeans period is the *Natural History* of Pliny, who gives detailed description of various commodities exchanged in the Roman world. He focuses preliminary only on those that were highly demanded and esteemed in Rome, and which were imported from Arabia, Syria, East Africa and India (Al- Salameen, 2004).

Moreover, the archeological excavations have revealed Nabataean Pottery in addition to the so-called Koan Amphora which

was produced in the western Mediterranean from the first century BC to the first century A.D. There was fine Ware Pottery from Petra, glass, imported amphorae, and sherds of eastern Sigillata, Cypriot Sigillata and imported lamps (Parker, 1996, Al-Salameen, 2004).

All these were proved and determined through the scientific technique of X-ray or neutron activation analysis and chemical analysis, all of these tools help us to determine the origin of this pottery.

Direct Roman rule in Aila began in 106 A.D with Trajan's annexation of Nabataea and the creation of Provincia Arabia, and when Aila became the southern terminus of the great *via nova Traiana* connecting Syria with the Red Sea (Parker, 1994). Trajan (98-117) linked Clysma (the Gulf of Suez) to the Nile by canal and built roads between Aila and Bostra and these two ports definitively outside Berenike and Leuke Kome (Hourani, 1984). Clysma and Aila appear as center of Red Sea shipping in the Islamic tradition (Crone, 1987). He also rebuilt and improved the roads which connected the Red Sea and Mediterranean. Goods from Aila and Clysma could also have been transported by means of the Trajanic canal (Fiema, 1991).

The Christian sites in southern and eastern Sinai (e.g., St. Catherina) and the copper mines of Sinai were connected to Aila by a road running through the Wadi Watir, Wadi Feiran, and the Wadi Mukattab. A branch track led to the Wadi Haggag and Dhahab, with a subsequent sea-borne crossing to the commercial center of Maqna on the eastern shore of the Gulf of Aqaba (Fiema, 1991). It seems that the pilgrim traffic to Mount Sinai probably increased local demand for goods and services.

How the Romans actually managed their trade relations with India in the same period is equally well known: once a year, Roman ships would depart from the ports of the Red Sea and sail towards India where they would collect those eastern items

(such as spices, silk, pearls, ivory, etc.) for which broad demand existed within the borders of the Empire (Nappo, 2009).

Trade in the Red Sea, following the vacuum created by the difficulties of the fourth century, fell into the hands of the Ethiopian Axumites and the Himyarites of South Arabia. It was these new entities, serving as intermediaries between the Romans and the Persians-the latter effectively controlling trade with India-that transshipped merchandise from India and the Far East into Roman territory. In fact, knowledge of sub-continental India was virtually lost to the Romans. (Mayerson, 1993)

Recent archaeological excavations revealed that several largely ceramic vessels, among these was a so-called Koan amphora produced in the western Mediterranean in the first centuries BC/AD. These vessels were wine containers (Parker, 1996). They are attested at other Red Sea ports and as far east as India (Peacock and Willaims, 1986). It thus constitutes important evidence for wine traded from the western Mediterranean to the Red Sea via Aila in the Early Roman Period (Parker, 1996). A few sherds of hand-made vessels, tentatively identified as imports from South Arabia (Parker, 1997), and many of these vessels almost certainly carried wine, olive oil and sesame oil into the city of Aila (Peacock and Willaims, 1986; Parker, 1997).

Also, the excavations conducted by Th. Parker in Aila revealed a complete wheel-made lamp and several other Egyptian lamp fragments (so-called "frog lamps") attest connections with Egypt during the Roman period (Parker, 1998). A notable find was a mirror handle of iron and ivory, clearly an import.

Many sherds of important Egyptian amphorae from both the mud-brick structure and associated cemetery attest connections with Egypt and may even imply the presence of an Egyptian Christian community at Aila in the fourth century (Parker, 1998). Other late Roman and Byzantine period am-

phorae attested at Aila, possibly an olive oil container from northern Syria and Asia Minor (Peacock and Willaims, 1986). By the early fifth century Aila seems to have been producing its own transport containers (the so-called "Aila- Axum amphorae"), which reached as far south as Ethiopia and suggest vigorous commercial activity (Parker, 1998; Parker, 2000).

The lack of olive pits is less surprising for the region's present environment could not have supported substantial olive cultivation and thus olives and olive oil were probably imported into the city (Parker, 1996), but more excavations is required to test this suggestion. A variety of stone imported for various uses also passed through the port of Aila in the Roman period, including marble, limestone, basalt, sandstone and alabaster (Parker, 1996). Varieties of imported stone reached Aila in the Roman and Byzantine periods. Some twenty of marble, mostly architectural elements and used in paved land of churches, were recovered in 1996. Basalt was imported for mortars, mills, and grinders, probably from the Arabian peninsula, beginning in the fourth century as cooking bowls, and, later also, lamps and other types of vessels, objectives of alabaster, limestone, and sand stone are also attested (Parker, 1997).

Clearly, Aila had golden age during the Roman and Byzantine periods, and acquired a widely – acknowledged significance in the Roman as well as Byzantine world of commerce and seafaring. Two fine roads served Aila. One of these roads connected it to Damascus; the other roads connected Aila to Gaza on the Mediterranean coast (Ghawanmeh, 1986) (Fig. 4). Gaza also seems an obvious Medterininain outlet for goods from Aila transported along the Darb el-Ghazzh. Timotheus of Gaza mentioned in the late fifth century that a trader in Indian goods and a native of Aila had passed through Gaza bringing two giraffes and an elephant as gifts for the Emperor Anastasius (Fiema, 1991).

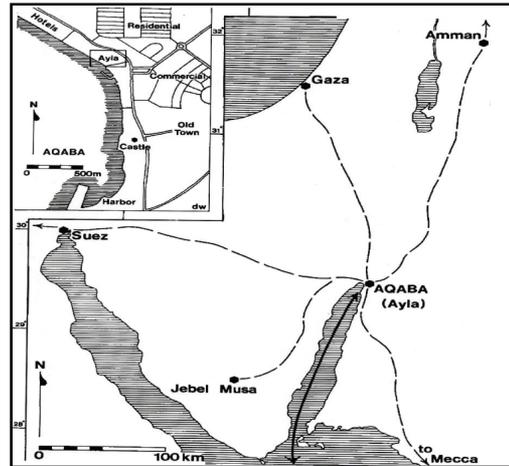


Fig. 4. Aila and its routes; inset of the modern town and the area of the site of Ayla (Whitcomb, 1987)

There were also routes connected Ptolemaic, Nabataean, and Roman Ports at the northern end of the Red Sea with maritime emporia elsewhere in the Red Sea and Indian Ocean (Sidebotham, 1989). It is clear that since the 4<sup>th</sup> century A.D, Aila and Clysma play a significant role in the area.

Luxury products, such as frankincense, myrrh, and spices, were off-loaded from ships to camel caravans for transport into the Empire, and caravans from Damascus and the interior could meet and trade with ships coming up the Red Sea from Africa and the east (Parker, 1994).

Since the time of the Diocletian (284-305 A.D) the Roman Empire displayed a clear policy in the Red Sea aimed to develop the role and the importance of the northern ports in the Red Sea, such as Aila and Clysma. Aila became the basis of the (10<sup>th</sup> Legion Fretensis) (Nappo, 2009) and witnessed a consistent urban boom from the 4<sup>th</sup> century A.D. onwards (Nappo, 2009).

Epiphanius (c.315-403) provides information on how Indian goods entered Roman territory during the mid-third century. In the course of describing how Mani (215-277 A.D), the founder of Manichaeism, acquired his wealth, he takes us back to the source of it; namely, a hellenized Saracen

from Arabia named Scythianus who traded in goods that came from India. The ports of Aila and Clysma are mentioned, but it is the port of Berenice in upper Egypt leading to the Thebaid, to Alexandria, to all Egypt, and the Pelusium that provided Scythianus with the means to acquire great wealth (Mayer-son 1993).

The citations dealing with the so-called Indian trade are more troublesome. Although writers from the fourth century onward cite Clysma and Aila as ports on the arms of the Red Sea which receive ships and products from India, we do not know whether they refer to cargo vessels originating in the east or are craft transshipping merchandise off-loaded at other ports, or if the merchandise originated in Ethiopia, south Arabia (Mayer-son, 1993).

The Aila port may have been densely populated only when merchant ships left or returned from their voyages at specific times of the year. Sailing times depend upon prevailing wind patterns in the Red Sea and the monsoons in the Indian Ocean. (Sidebotham, 1989). Due to the extremely arid climate (mean annual precipitation is 4mm), little could be cultivated at the port. Even the drinking water had to be hauled in by pack animal with great effort from distant wells and springs. For example, some of the springs are close to the site like 'Ain 'Abu 'Inzor situated just above the new 'Aqaba-Ma'an roadway, and 'Ain el Jamam, these closely related sites provide evidence of good water sources which provide a relatively constant water supply for the areas at present. (Jobling, 1983). Aqueducts from reservoirs fed by these springs were traced as far south as Khirbt Humeima. Initial exploration would suggest that the aquifers in the Ras en-Naqb escarpment were sources of water and the focus for the developed hydrology of the area in the later Roman and Byzantine periods (Jobling, 1983).

In the second half of 4th century the Byzantine historian Philostorgius mentioned that Aila receiving merchandise from

the East, and termed it a polis (Fiema 1991). Evidence for trade with India, and indeed, for the presence of Indians on the site, has come in from: pottery of Indian origin (Parker, 1997; Shajan et al, 2008). Quantities of imported pottery suggests Aila's role as a nexus of commercial exchange. Aila was situated at the southern end of Wadi Arabah, where copper mining was conducted for centuries. Hundreds more fragments of copper and bronze were found in 1996 excavations, combined with more remains of copper ore, copper slag and iron slag, provide further evidence of metal-working at Aila in the Roman and Byzantine periods. Much of this copper derived from the mines of Wadi Arabah (Parker, 1997).

The evidence from Aila suggests an intensification of trade during the 4<sup>th</sup> century (the beginning of the Byzantine period) and that Aila was an important port through the Early Islamic period (Parker, 2006). The Byzantine trade extended to the east, reached India by way of Aila at the head of the Red Sea, the presence of amphorae from Aqaba throughout the Red Sea region and at Axum, and finds of Axumite coins in Jerusalem, testify to relations that were not exclusively religious (Laiou, 2002). The increasing use of the port of Aila during the 4th century could be related to the need to keep a tight control on the trade and to better exploit the route linking to the Axumite ally, and of this specific route might also be a key to understand the reasons behind the ultimate decline of Berenike after the middle of the 5<sup>th</sup> century A.D. (Nappo, 2009).

We can say that from the 4<sup>th</sup> century onwards the Byzantines reorganized their positions on the Red Sea: the ports of the northern Red Sea were linked up with Axum and the Byzantine state became increasingly involved in the trade with that country. Proof of the increasing importance of the northern Byzantine settlement on the Red Sea in the general economy of the area can be also found analyzing the pottery sherds from sites on the southern Arabian

coast, such as Khor Rori and Qana. It is clear that those ports became more and more commercially connected to Aila and Axum from the end of the 5<sup>th</sup> century A.D, and even more from the beginning of the 6<sup>th</sup> century (Nappo, 2009).

Toward the end of the fifth century, there is evidence of new activity in the economic life of Aila and the Red Sea. The Emperor Anastasius (491-518), noted for his measures to rehabilitate the financial resources of the empire, undertook to collect customs duties on foreign merchandise entering imperial ports. Prior to 473, Roman customs officers were known to have been stationed on the island of Iotabe in the Red Sea at that time, a wily Persian Saracen named Amerkesos took possession of the island.(Mayerson, 1996). At the 5th century A.D another important chapter in the history of Byzantine Aila was began, the adventure of Amerkesos or Imru' al-Qays<sup>8</sup>. During the regin of Byzantine emproor Leo I (457-474), an Arab chief Amerkesos was a Ghasanid dignitary, livivng in the Lakhmid Sasanain territory of Hira (Shahid,1989). According the historiographer Malchus of Philadelphia, Amerkesos moved to that part of Arabai which was that adjacent to Persia. When leaving Hira, on the lower Euphrates, the Arab chief must have passed through Wadi el-Sarhan and Dumat al-Jandal to the nourthern Hijaz and to the Red Sea coast. He seized the island of the Iotabe<sup>9</sup> (Map.5), at the mouth of the Gulf of Aila, avictid the officialş and became wealthy by collecting the taxes (Shahid 1989; Mayerson, 1992; Nasarat, 2009). At the same time, Amerkesos occupied several villages in the Gulf of Aila, designated by Malchus of Philadelphia in "Arabai Petraea" (Shahid, 1989), and he wished to become an ally of the Romans and a phylarch of the Saracens under Roman rule in Arabia Petraea (Shahid, 1989).

After his successes on land and sea, the Arab chief sent Petrus, the bishop of his tribe, to Constantinpole to negotiate with Leo the quastion of his phylarchate in Pales-

tine Tertia. Petrus accomplished his mission with skilled diplomacy. For 25 years, Amerkesos enjoyed full autonomy in the island of Iotabe and the Petraean territory (Shahid, 1989; Zayadine, 1994). About ca. 498 under Anastasius, Romanus, according to Theophanes, undertook a punitive campaign against the Saracens, who were causing serious damage to the Provincia (Mango and Scott, 1997; Mayerson, 1992). In great battles Romanus gave Roman merchants once again the opportunity to inhabit the island and the fetch cargoes from the Indians, and to bring in the tribute appointed by the Roman Emperor. The Roman aim is clearly defined, direct access to the Indian trade by state –supported merchants (Smith,1954).

Theophanes comments that the island of Iotabe in the Red Sea had at one time produced considrable tax revenues for the Roman emperor before its occupations by the Saracens. Romanus liberated the island and turned it over to Roman traders allowing them to live there as an autonomous community, to export cargoes (i.e., to transship merchandise) from India, and to produce regular revenue for the emperor (Mayerson, 1992).

In the 5<sup>th</sup> century the Greek writer of

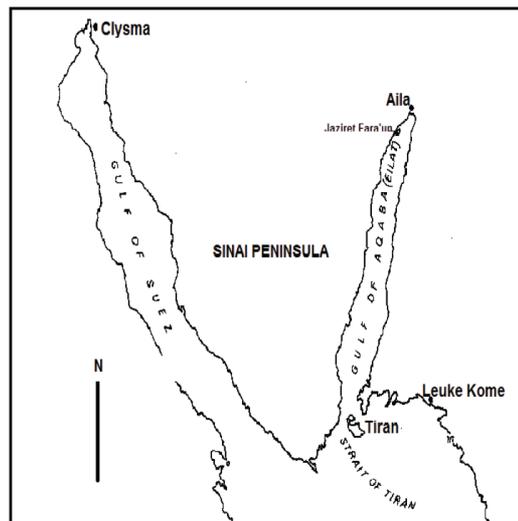


Fig. 5. The location of the island of Tiran (Iotabe) (Mayerson, 1992)

manuscript "*the Itinerary from the Paradise of Eden to the Country of the Romans*" mentioned Aila as an important port at the northern head of the Red Sea, where as the goods and commodities reached from India, and transported to Egypt, then via Mediterranean to Rome and Belad (Al-Gall-France). The writer of manuscript limits the distance between Aila and Egypt with (7 stages) (Mayerson, 1993). The Itinerary of Antonius of Placentia (ca 570) explicitly stated that Aila was harbor to which ships from India brought aromatics. (Fiema, 1991). This indicates that the port of Aila has been active during the 5<sup>th</sup> century as the evidence of Antonius.

It seems that the port of Aila whos prosperous during the 6<sup>th</sup> century, and the Egeria's account mentioned that products from India were transported by Ethiopian traders to their own markets of Adulis and even to ports of Clysma and Aila. One of the principle sources about the Eastern trade in the Byzantine period is the work of Cosmas<sup>10</sup> Indicopleustes (c. 530) who says that Adulis was much frequented by traders who came from Alexandria and Ela (= Aila) (Mayer-son, 1993). Greek ships where returning from India to Aila about 570 A.D. with aromatics (Crone, 1987). Alexandria was mentioned in the *Expositio Totius Mundi* as city opulent through the trade of aromatics. the transport of merchandise from Aila would have followed the road through Clysma, where Oriental goods were also disembarked, to Babylon in Egypt, and thence down the Nile to Alexandria (Fiema,1991).

In the 6<sup>th</sup> century Procopius gives a long account of navigation in the red Sea, and Aila was important port there, he said that: "*the boundaries of Palestine stretch to the sea called Red... and a city lies on its shore called Aila... As you sail on, the land on either side is visible as far as the islands Iotaba, not less than a thousands stades distant from Aila*" (Smith, 1954). The mention of the site during 6th century by Procopius suggests that Aila was still a functioning port in the early 6th cen-

tury.

During the reign of Emperor Justinian (527-565 A.D) the long process of extending the Byzantine influence through the Red Sea area was concluded. For a short but significant period, the Byzantines were so able to make the Red Sea *a Mare Internum*, like the Mediterranean, this aim was achieved through two strategies, first of all, by improving Byzantine direct presence on Red Sear and reorganizing Byzantine settlements in the area. On the other hand, a sharp foreign policy led to include Axum within the Byzantine "commonwealth". These achievements were exploited by Justinian who established a trade route via Himyar and Axum bringing silk into the Empire while bypassing Persia (Simon, 1989; Nappo, 2009). During the 6<sup>th</sup> century Byzantium did everything to promote trade in two of its ports on the Red Sea, Clysma and Aila and was in fact fairly successful. The Byzantine traders could find there silk and aloes from China, pepper from India and Malabar, copper and cloth from India, and all of these goods entered the Byzantine territory along the main maritime route the Red Sea and the outlets of port Aila and Clysma (Fiema,1991). The Byzantine exports to the markets of Ethiopia, South Arabia, India and Ceylon presumably included textiles, glass and luxurious objects (Fiema, 1991; Crone, 1987). Thousands of fragments of glass have been recovered from Aila, but there is as yet no evidence of local glass production, some seems to be of Egyptian manufacture, but it appears that the bulk of the glass is of Syro-Palestinian origin (Parker, 1997).

During the period of Justine II (565-578 A.D.), the Byzantines imported the silk from India, and merchandise by ships to Adolis, then transported to Aila in north head of the Red Sea, then by land to the coasts of Belad Ash-Sham (Simon,1989, Nasarat, 2009). The recent archaeological excavations at Aila have been revealed that they were some coins, dating from the late third to mid-fourth centuries (Parker, 1996)

and a single Byzantine gold coin, this was minted under Heraclius, a type datable to 638-641 A.D. (Whitcomb, 1993).

A later report on Aila comes from the Piacenza pilgrim (c. 578 A.D), who is generally known as Antoninus or Pseudo-Antoninus. On his tour of biblical and cultic sites in the Holy Land, he traveled from Sinai to Egypt via Clysma. He mentions a hearsay report concerning Aila, which he states receives ships coming from India with a variety of spices "Then a ship sailed into Aila from India with various perfumes" (Simon, 1989; Mayerson, 1993; Fiema, 1991). This indicates that the port of Aila still has been active in trading during the 6<sup>th</sup> century. These clarify by participation of Aila in the Eastern maritime trade during 6<sup>th</sup> century. For example, among 60 ships supplied for the expedition of Ela Asbeha against Duh Nuwas of Himyar, 20 from Clysma, 7 from Iotabe, 2 from Berenike, 7 from Farasan, 9 from India, 15 came from Aila (Fiema, 1991; Vasiliev, 1950). This information has been used to figure out the important of port of Aila, it is indeed clear that Aila and Clysma must be considered the most important ones, since they provided the Axumite army with the biggest amount of vassals. Also this economic aspect of life in Aila is further reflected by the terms of the capitulation of that city to Mohammed in (630 A.D.). The Islamic historian Al- Waqidi mentioned that Dumat al-Jandal (al-Jawf), Ayla and Tayma had become afraid of the prophet when they saw that the nomads had embraced Islam (Fiema, 1991). Mohammed guaranteed the safety of the people of Aila and their ships "... *this is a guarantee from God and Mohammed the prophet, the apostle of God to Yuhanna ibn Ru'ba and the people of Ayla for their ships and their caravans by land and sea...*" (Ibn Hisham, 1955; Zayadine, 1994). There were Yemeni traders in Aila at the time of its surrender to Mohammed: Yemeni and local inhabitants alike were granted freedom to travel by both land and sea (Crone, 1987).

At the same time the treaty secured free passage to the Muslim troops in territory of Aila. As early as 634, they penetrated into Wadi 'Arabeh and defeated the Byzantine army at Dathin, near Gaza and at Ajnadayn. Thus the way was open for the Arab Muslims to put an end to Byzantine rule in Syria in 636-638 A.D after the Battle of Yarmuk (Zayadine, 1994).

## 5. CONCLUSION

It is worth mentioning that Aila played an important major economic role during the Nabataeans, Roman and Byzantine periods. Large quantities of imparted goods, including fine ware pottery and amphorae from the Mediterranean, glass from the Levant and Egypt, and exotic stone suggest that Aila was a thriving center of commerce in Byzantine period.

The ancient authors make it clear that Aila was an important point of transshipment in the lucrative aromatics trade, which must have generated a great deal of revenue for its inhabitants.

In antiquity Aila was a very important rout of trade and cultural connections, and was important as the interior trade route connecting Arabia with the Mediterranean, in the Nabataeans Roman – Trade. With Aila, Clysma and Iotaba identified as the principle entrpots of Byzantine maritime commerce in the Res Sea.

International commerce via the Red Sea in general and the Gulf of Aila in particular remained a high priority to the imperial government. It is seems that the port of Aila still prosperity during the 6<sup>th</sup> century until late Islamic Period, as revealed by excavations conducted many where in Aila.

**Footnotes:**

- 1 The Nabataean / Roman/ Byzantine city will be referred to as "Aila". The adjacent early Islamic walled town will be referred to as "Ayla". (Parker, 1997).
- 2 A stade/ stadium measures 185 meters/ 607 feet. Strabo locates Aelana /Aila 233 km from Gaza.
- 3 A Roman mile is 1. 480 meters. Aila would thus be 74 km from the Feiran oasis in the Sinai.
- 4 The name Maqass comes from the nearby former train-siding in the local dialect.
- 5 The site was settled by Edomites in the 8<sup>th</sup> – 7<sup>th</sup> centuries B.C. (Zayadine, 1994).
- 6 Aila is considered the most important Edomites sites in Jordan (MacDonald, 2000).
- 7 Fore more information about the spread the Christianity at Aila see: Schwabe, 1953.
- 8 The traditional view is that Greek Amorkesos is Arabic Imru' al-Qays, a well-known pre-Islamic personal name (Shahid, 1989).
- 9 According to Procopius this island situated "not less than 1000 *stadia* (130) miles from Aila" (Mayerson, 1992). Most scholars designate "Tiran" as the site of ancient Iotabe (Mayerson, 1992) For more information about the site of Iotabe. see: Mayerson, 1992.
- 10 Greek merchant in the 6<sup>th</sup> century turned *monk*, his Book entitled "*Topographia Christiana*" (Simon, 1989).

**REFERENCES**

- Abudanh, F. (2006). *Settlement Patterns and Military Organization in the Region of Udhruh (Southern Jordan) in the Roman and Byzantine Period*, Unpublished Doctoral Dissertation, University of Newcastle upon Tyne, UK.
- Allison, A. (2007). *Paleoenvironmental Reconstruction of Late Holocene costal Sediments along the Southern Dead Sea transformation Aqaba*, Jordan. Unpublished Master thesis, University of Missouri, USA.
- Bartlett, R. (1972). The Rise and Fall kingdom of Edom. *Palestine Exploration Quarterly* 104, 26-37.
- Crone, P. (1987). *Meccan Trade and the Rise of Islam*. Princeton University press, Princeton.
- Dolinka, B. (2003) *Nabataean Aila (Aqaba, Jordan) from a Ceramic Perspective*, Bar International Series 1116.
- Fiema, Z. (1991) *Economics, Administration and Demography of Late Roman and Byzantine Southern Transjordan*, Unpublished Doctoral Dissertation, University of Utah, USA.
- Finkelstein. I. (1979) The Holy Land in the Tabula Peutingeriana: A Historical- Geographical Approach. *Palestine Exploration Quarterly* 111, 27-34.
- Frank, F. (1934). Aus der Araba 1: Reiseberichte. *Zeitschrift des Deutschen Palästina-Vereins* 57, 191-280.
- Jobling. W. (1983) The 1982 Archaeological and Epigraphic Survey of the 'Aqaba-Ma'an Area of Southern. Jordan. *Annual of the department of Antiquities of Jordan* 32, 185-196.
- Jones, H. L (1930) *Geography of Strabo*, (transl.) 8 Vols. London, William Heinemann LTD.
- Hourani. G. (1984). *Arab Seafaring in the Indian Ocean in Ancient and Early Medieval Times*. Princeton University Press .William Street. Princeton.
- Huntingford, G. (1980) *The Periplus of the Erythraean Sea*. The Hakluyt Society. London.
- Ibn Hisham. (1955) *Sirat Rasul Allah*. Mustafa al- Saqa et al. eds. Cairo. Mustafa al-Babi al-Halabi.
- Isaac, B. (1996) Eusebius and the Geography of Roman Provinces. *Journal of Roman Archaeology Supplementary Series* 18, 153-167.
- Geer, M. R (1961) *Diodorus Historiae, The Library of History*, (transl), 12 Vols, London, William Heinemann LTD.

- Ghawanmeh, Y. (1986) The Port of Aqaba its Role in the Indian Ocean Trade in Ancient and Medieval Times, *Annual of the department of Antiquities of Jordan* 30, 311-318.
- Glueck, N, (1965). Ezion-Gerber, *Biblical Archaeologist* 28, 70-87.
- Khalil, L (1985). Preliminary Report on the 1985 Season of Excavations at Al-Maqass-Aqaba, *Annual of the department of Antiquities of Jordan* 37, 481-483.
- Laiou, A (2002). The Economic History of Byzantium: From the Seventh through the Fifteenth Century. *Dumbarton Oaks Research Library and Collection Washington, D. C.*, 170- 220.
- MacDonald, B (2000) *East of the Jordan, Territories and Sites of the Hebrew Scriptures*, The American School of Oriental Research, Amman.
- Magness, U (1998). Early Islamic Settlement in the Southern Negev. *Bulletin of the American Schools of Oriental Research* 310, 39-57.
- Mango, C and Scott, R (1997) *Chronographia*, (transl.) Clarendon Press, Oxford.
- Mayerson, Ph. (1963) The Desert of Southern Palestine According to Byzantine Sources, *American Philological Society* 107, 160-172.
- Mayerson, Ph. (1992) The Island of Iotabe in the Byzantine Sources: A Reprise, *Bulletin of the American school of Oriental Research* 287, 1- 4.
- Mayerson, Ph. (1993) A Confusion of Indias: Asian India and African India in the Byzantine Sources. *Journal of the American Oriental Society* 113/2, 169-174.
- Mayerson, Ph. (1996) The port of Clysma (Suez) in Transition from the Roman to Arab Rule. *Journal of Near Eastern Studies* 55, 119-126.
- Meloy, J. (1991) Results of an Archaeological Reconnaissance in West Aqaba: Evidence of the Pre-Islamic settlement, *Annual of the Department of Antiquities of Jordan* 35, 397-414.
- Nappo, D (2009) Roman policy in the Red Sea between Anastasius and Justinian' In Blue, L. K., Cooper, J., Thomas, R. I. & Whitewright, R. J. (eds). *Connected Hinterlands. Proceedings of the Fourth International Conference on the Peoples of the Red Sea Region*. Oxford: BAR International Series.
- Nasarat, M (2009). *The History of the Southern Jordan during the Byzantine Period, from Wadi el-Hesa in north and port of Aila (Aqaba) in south (324-636 A.D)*, unpublished PhD Dissertation, University of Jordan, Jordan (in Arabic).
- Nobble, C.H.F (1932), *Geographia*, Leipzig.
- Parker, S. T (1982) Preliminary Report on the 1980 Season of the Central "Limes Arabicus" Project, *Bulletin of the American School of Oriental Research* 247, 1-26.
- Parker, S. T (1986) *Roman and Saracens: A History of the Arabian Frontier*. ASOR Dissertation Series 6. Winona Lake, IN: Eisenbrauns.
- Parker, S. T. (1994) The Roman Aqaba Project: Aila Rediscovered. *The Biblical Archaeologist* 57/3, 172-173.
- Parker, S. T (1996) The Roman 'Aqaba Project the 1994 Campaign, *Annual of the Department of Antiquities of Jordan* 15, 231-257.
- Parker, S. T. (1997) Preliminary Report on the 1994 Season of the Roman Aqaba Project, *Bulletin of the American School of Oriental research* 305, 19-43.
- Parker, S. T. (1998) The Roman 'Aqaba Project the 1996 Campaign, *Annual of the Department of Antiquities of Jordan* 32, 375-394.
- Parker, S. T. (2000) The Roman 'Aqaba Project: the 1997 and 1998 Campaigns, *Annual of the Department of Antiquities of Jordan* 34, 373-394.
- Parker, S. T. (2006) *Resources, routes, settlement patterns and interaction in the Wadi Arabah" in Crossing the Rift*, Piotr Bienkowski, Katharina Galor, eds. (Oxford: Oxbow Books), 223-230.

- Peacock, D P. S and Williams, D. F (1986) *Amphorae and the Roman Economy: An Introduction Guide*. London. Longman.
- Peters, F. (1984) The Arabs on the Frontier of Syria Before Islam, *Proceedings of the First International Conference on Bilad-al-Sham*, University of Jordan and Yarmouk University, Amman, 20-25 April 1974, 141-173.
- Rackham, H, Hones, W.H.S and Eichholz, D.E (1962) *Natural History*, (transl), 10 Vols, Loeb Classical Library, Cambridge.
- Rostovtzeff. M (1932) Foreign Commerce of Ptolemaic Egypt. *Journal of Economic and Business History* 4, 728-769.
- Al-Salameen, Z. (2004) *The Nabataean Economy in the Light of Archaeological Evidence*, Unpublished Doctoral Dissertation, Manchester University, UK.
- Schwabe. M. (1953) A Greco-Christian Inscription from Aila. *The Harvard Theological Review* 46/1, 49-55.
- Shajan, K, Cherian, P, Tomber R. & Selvakumar V. (2008) The external connections of Early Historic Pattanam, India: the ceramic evidence, *Antiquity* 082/315, (<http://www.antiquity.ac.uk/projgall/tomber315/>)
- Shahid, I. (1989) *Byzantium and the Arabs in the Fifth Century*, Washington, D.C., Dumbarton Oaks.
- Shehadeh, N. (1985) The Climate of Jordan in the Past and Present, *Studies in History and Archaeology of Jordan* 3, 25- 37.
- Sidebotham. S. (1986) *Roman Economic Policy in the Eurythra Thalassa: 30B.C A.D 217*. Leiden: Brill.
- Sidebotham. S. (1989). Ports of the Red Sea and the Arabai- India Trade. *L'arabie Preislamique Et Son Environnement Historique Et Cultuural. Acts du Colloque de Starbourg 24-27 Juin 1987*. The John Rylands University Library of Manchester.
- Simon, R. (1989) *Meccan trade and Islam, Problems of origin and structure*. Akademaia Kiado, Budapest.
- Smith, S. (1954) Events in Arabia in the 6<sup>th</sup> Century A.D. *Bulletin of the American school of oriental research* 16/3, 425-468.
- Tarn, W (1929) Ptolemy II and Arabia. *Journal of Egyptian Archaeology* 15, 9-25.
- Thomas. W. (1998) *The Works of Josephus, the Jewish Wars, the Jewish Antiquities*, (transl). Nelson Publishers, Nashville.
- Vasiliev, A (1950) *Justine the First. An Introduction to the Epoch of Justinian the Great*. Cambridge, Mass: Harvard University Press.
- Weber, E. (1976) *Tabula Peutingeriana, Codex Vindobonensis 324: Kommentar*. Graz: Akademische Druck-u.Verlagsanstalt.
- Whitcomb, D. (1988) A Fatimid residence in Aqaba, Jordan, *Annual of the Department of Antiquities of Jordan* 32,207-224.
- Whitcomb, D. (1993) Aqaba, 1989-90, *In stitut Francais du Proche-Orient*1/2, 239-244.
- Whitcomb, D. (1995) *Ayla Art and Industry in the Islamic Port of Aqaba*, Chicago, Oriental Institute Museum Publisher.
- Whitcomb, D. (1987) Excavations in Aqaba First Preliminary Report, *Annual of the Department of Antiquities of Jordan* 31, 247-266.
- William, H. D. (1904) *History of the Wars*, (transl), London.
- Zayadine, F. (1994) Ayla - 'Aqaba in the Light of Recent Excavations, *Annual of the department of Antiquities of Jordan* 38, 485-505.