

Sailing Routes to the East in Roman times

By Javier Girona Martinez

MA in Ancient History

The annexation of Egypt to the Roman Empire and its control over the Eastern side of the Mediterranean brought stability to the *Mare Nostrum* and gave Rome the opportunity to explore other areas to the East. The first half of the millennia witnessed the development of sailing routes opened for trade between Egypt, Arabia, East Africa and India. Even though trade routes were described as Indo-Roman¹, it involved many other parties. This article is going to look at the various sailing routes connecting the East and the Mediterranean during Roman times, the parties involved in this trade and the type of boats that might have been used on those journeys.

This was a trade that started with the Ptolemies and developed with the Romans. Communication between the Mediterranean and the East was first opened to Greeks and Romans with Alexander's conquests. Sailing by hugging the coasts was common sailing practice amongst Greeks and Romans until new sailing routes opened. These novel routes used the monsoon winds, which has fascinated ancient writers and modern scholars since its discovery². The monsoons, which were called *Hippalus*, were first discovered by a person of that same name, who set sail for India and reached Malabar using *Hippalus*³. J. Thorley (1969) states that this discovery happened soon after Strabo's visit to Egypt, on the end days before the turn of the era.

The type of boats used, Ronald Bockius (2009) wrote, were of two types: boats with lateen and boats with square sailing rigs. The writer looked at sailing components found in places such as Myos Hormos and Berenike and did that to understand the type of boats used. The writer says that the move from a square into a lateen sail in the ancient world should be looked not just from a sail-plan perspective, but also from the usage of the various components on both systems. According to Julianne Whitewright (2007), sailing rigs were of two types: square-sails and fore-and-aft sails, which relates to how they lie, along the centre line or across and square to the centreline of the vessel. This same author states that there are strong evidences to believe that the

¹ Whitewright J. 2015: 569.

² Parker G. 2001: 66.

³ Casson L. 1984: 472.

usage of a square-sail system in the region was widespread. The author says that a limited iconographic evidence and a large corpus of archeological evidence might suggest the usage of the square-rig sail system in the Indian Ocean.

This square-rig sail system, which was used in the Mediterranean, Whitewright (2007) believes that was used in the East during the first half of the millennium. To prove this, he refers to the numerous components found at Myos Hormos and Berenike, such as deadeye, brail rings or sail cloths, which seemed to be of a square-rig system of sailing⁴. In another of his articles, Julian Whitewright (2015) states that the components found at Myos Hormos imply that the sailing rigs used at the Red sea were not different from their Mediterranean contemporaries⁵.

Some of the boats though might had one or two masts. Lionel Casson (1980) believed that boats sailing the Indian Ocean had to be robust and therefore were the same boats used in the Mediterranean⁶. Schoff W. H. (1917) claims that Romans used vessels similar to those Arab dhows and that sailing before the wind was preferred. This might have been a system used by Arab's and Dravidian's mariners earlier⁷. Hourani G. F. and Carswell J. (1995) wrote that Arab dhows were not able to navigate in such rough waters and therefore Arabs followed routes along the Arabian coast and Iran and returned using the Northeast winds. It seems as if using one type of sail-rig or another depended on whether vessels sailed short or long distances or whether they crossed the Indian Ocean or not.

Various routes connected the Mediterranean and the East. One of these routes connected the West through Egypt with the Red sea, then through the Indian Ocean to Asia. These sea routes to India and also to East Africa might had been sailed in the past by Ancient Egyptians and other ancient groups. It is though with Western authors that we understand the sailing routes and Monsoon winds in these areas; with Strabo, who reports about Eudoxus of Cyzicus expeditions on the Red sea employing an Indian shipwrecked; with Marinus' distance estimations made for the Ptolemies; with Pliny, who reports that Annius Plocamus ended up in Sri Lanka blown by winds; and

⁴ Whitewright J. 2015: 579 and 581. Evidences of square rigs have been found at Alagankulam. Pliny the Elder describes a voyage in the Ganges with sail rigs used at the Nile, presumably referring to the usage of square sails in the Bay of Bengal.

⁵ Whitewright J. 2007: 287.

⁶ Casson L. 1980: 23.

⁷ Schoff W. H. 1917: 241.

also with the Periplus of the Erythraean Sea, which describes Romans and Greeks arriving to far away places in Arabia, East Africa and India.

Excavations made in Clysma / Suez, Berenike and Myos Hormos have proven that these locations were the most important ports connecting Egypt to the East. These three ports plus Arsinoe⁸, might have been the main entrepôts between Alexandria and the areas of Arabia, India and East Africa. According to Raoul McLaughlin (2010), Clysma was used as a direct connection between Alexandria and the Red sea by a place near Suez. Due to the expensive costs of bringing components through the desert, Clysma might have been a port from where ship building and / or repair happened⁹. However, sailing north would have encountered constant northerly winds the last third of the Red sea. Myos Hormos seems to have played a bigger role during the second, third and early fourth century AD, while Berenike might have played a big role with the Ptolemies from the third to the first century BC and an important role during the republic and the principate¹⁰.

Sailing conditions in the Red sea are far from easy. The first *elephantegoi*, ships constructed by the Ptolemies to transport elephants, experienced difficulties navigating the unknown and shallow waters of the Red sea, which were full of underwater reefs and rocks. Agatharchides' fragments and Strabo's writings describe the danger of navigating those waters from the latitude where Berenike was situated to more southwards areas¹¹, especially for those boats which were not dhows or small local vessels. Agatharchides seemed well informed about the difficulties experienced by big boats in the Red sea when highlighted the need to anchor during the night. Northerly winds made the returning journey to Egypt harder but there were many factors involved in deciding what ports to use. Some of these factors were the costs of camel caravans, conditions of anchoring at ports and the proximity to the Nile River. Journeys returning to Egypt then required either sailing to Berenike and then carrying on with donkeys¹² and camel caravans or sailing to Myos Hormos with or without stopping at Berenike. Even though sailing was required for few extra days to reach

⁸ Thorley J. 1969: 213.

⁹ Sidebotham S. E. 2008: 308.

¹⁰ Sidebotham S. E. 2011: 149.

¹¹ Seland E. H. 2009: 180.

¹² Casson L. 1980: 22.

Myos Hormos, the time required to reach both destinations was similar, because of the 5 extra days needed from Berenike to cross the desert.

Looking at wind conditions on the Red sea, the first northern third had them coming from the North most of the year and especially between June and September. These conditions were a bit different at the central part, where there were north winds during the summer with variable conditions and southerly winds in winter. These conditions were similar at the last third. In the Gulf of Aden a prevailing north wind was experienced in the summer and a south wind towards the Red sea in the winter¹³. These conditions imply that the journey southward was relatively easy while the journey northward at times encountered unfavourable winds.

The journey from Egypt to India through the Red sea would have started in mid-summer, when favourable northerly winds made navigation easier, then connecting with the southerly west monsoon winds to bring sail to India at around September. W. H. Schoff (1917) states that the time of the voyage was limited as sailors had to take into account the northerly winds in the Red sea connecting after with the southerly east monsoon winds. Beside this, it did not exist the compass, neither a log to calculate the sailing course¹⁴. Diurnal navigation in the Red sea might have made it easier on the northward journey, when the heating of the land relative to the sea veered the wind. It seems that familiarity with wind conditions in the Red sea might have played an essential part and foreign sailors might have struggled in these waters. The *Periplus* though mentions Indian vessels navigating from Northwest India to the Gulf of Aden. According to Whitewright (2015), the presence of Indian vessels at Myos Hormos and Berenike imply that trade happened both ways, with a traffic also of Indian boats coming to Egypt. I wonder whether this was the case as these enterprises required an organisation and resources that regions in the East did not seem to have at the time.

The monsoon winds blow from the Southwest between May and October. Vessels departing from Guardafui would have headed for Barbaricum (Scythia), Barygaza, Muziris and Limyrike or other secondary places such as Nelkynda. Some sea voyages involved following the coast of Ras Fartak, twisting the wind for few days and then let winds bow the boats to their destinations with the wind more aft or astern in the case

¹³ Whitewright J. 2007: 78.

¹⁴ Schoff W. H. 1917: 241.

of Scythia¹⁵. Once in Barbaricum, Roman vessels would have navigated upstream to Minnagara, an important trading town at the time. According to the Periplus, Barygaza had multitude of connections with Western India and Central Asia due to its centrality in northwestern India¹⁶.

The returning journey would have started anytime between November and April when the southerly monsoon blew, allowing vessels to navigate southwest to reach the Gulf of Aden. Once there, sailors might have encountered northerly winds to navigate the Red sea. These statements about the monsoon winds though are not completely accurate, as there are transition periods in spring and autumn, periods when winds are variable. There are also differences between both wind seasons, the Northeast is gracious and balmy and the Southwest boisterous and stormy¹⁷.

The return journey would have been again to Berenike and Myos Hormos, then through the Eastern desert to Coptos, navigating the Nile upwind and downstream towards Alexandria and reaching destination in 10 to 50 days, depending on the time of the year when journeys were completed. Therefore, if a vessel arrived in February or March at the latest, under favourable conditions could have reached Alexandria by March or April. The Nile sailing season though started in August-September when inundation happened¹⁸. Therefore, it might be that these timings did not apply to the period between January and June, when the Nile had low water levels, making sailing difficult and slow, either to the April-May period, which experienced periodic gales in the Delta region. Other bureaucratic and organisational issues affecting the time to cover this journey were corruption and time required by officials to reach destinations, which could slow processes for months. This might imply that boats arriving from India reached Coptos in times of difficult navigation and therefore Romans either used large boats to navigate shallow waters or waited for the main navigation period to continue.

It is argued that it wasn't possible for a boat to do the whole journey India-Rome and return in one year. According to Cobb (2014), under favourable conditions vessels made the circuit Rome-India in 12 months by departing from Ostia in mid-April, while under unfavourable conditions it could take around 2 years. These two

¹⁵ Casson L. 1984: 478.

¹⁶ Seland E. H. 2016: 198.

¹⁷ Casson L. 1980: 24.

¹⁸ Seland E. H. 2011: 405.

hypothesis are of course two extremes and a middle ground should be taken, which means that a return journey lasted longer than a year. Evidences of rocks found at Myos Hormos from Qana' and Khor Rori, in the Arabian Peninsula, indicates that there was exchange of goods in the journey to India, which would have affected the length of the voyage. It seems that there were two separate circuits, Rome-Alexandria and Alexandria-India¹⁹. The fluctuation in volume and nature might have been different in each network²⁰. The Rome-Alexandria network could fulfil a return journey within one year, the Alexandria-India network also. This is not to say though that goods were only transported between India and Alexandria. Indian goods arrived to Rome and vice-versa, but not within the same route network.

The *pax Romana* brought trade in the Mediterranean and towards the East with an intensity never seen before²¹. Alexandria became with the Ptolemies a major artistic and commercial centre, the main destination of a trade network that might have received hundreds of merchant vessels every year²². Evidence of goods of East Indian, Yemenite, Parthian / Sassanian, Nabatean and Roman origin suggests the usage of various ports and regions for this trade. Strabo, the Periplus or Pliny the Elder, who includes earlier accounts of Onesicritus and Juba, provide some timings to understand the sailing routes and journey times. First vessels had to sail from Juliopolis, next to Alexandria, to Coptos, which was the main Nile hub between the Red sea and Alexandria. The Coptos tariff, the Muziris papyrus and other sources, mention Coptos as a main hub connecting the Eastern trade and Alexandria. A northerly wind helped boats navigating upstream, reaching Coptos in around 12 days. Boats then had to be disembarked and goods carried on camel caravans to go through the Eastern desert to the cities of Berenike or the closest Myos Hormos. A journey crossing the desert took between 5 and 12 days and had to be done mainly through the night due to sun heat.

Once at ports, boats departed towards India. Journeys between the Red sea ports and India started before the rising of the Dog star, around mid-July²³. Vessels reached the Gulf of Aden in around 30 to 40 days arriving to the port of Kane, the island of Socotra or Cape Guardafi, at the Horn of Africa. According to Seland E. H. (2014),

¹⁹ Cobb M. A. 2014: 107.

²⁰ Cobb M. A. 2014: 90.

²¹ Parker G. 2001: 74.

²² Whitewright J. 2007: 283.

²³ Bagnall R. S. 2003: 51.

Socotra was a crossroad of commerce based on the monsoon winds and an ideal stop for vessels coming from various regions of the Western Indian Ocean. Graffiti found at Socotra in Brahmi, Kharosthi, Bactrian, Palmyrene, Aramaic, Greek, Axumite and Ethiopian languages suggests the presence of merchants from all these areas in these islands²⁴. According to Hourani, G. et al (1995), Socotra and towns in South Arabia were entrepôts of this trade. Arab sources state that setting up from the right locations around the Gulf of Aden influenced greatly reaching destinations at India²⁵, which might explain stopping at these places.

Lionel Casson (1984) says that boats were able to leave from the Red sea in June but arriving in the summer to India would have been dangerous due to rough sea conditions, while October to November are transition monsoon periods, which would have made journeys longer and risky. Timings were important and leaving mid-July was vital to encounter favourable conditions. Even by departing in mid-July, sailors still had to deal with the Southeast monsoon winds at 5 to 6 knots²⁶, which made the journeys dangerous and challenging²⁷. The journey might have taken 30 to 40 days using the southerly east monsoon winds, arriving around September.

The Periplus refers to the existent trade between Rome and the East and ignores trade that existed in the Indian Ocean between neighbour regions. Networks connected East Africa with India and with the Persian region. Places such as Apologos, in Southern Mesopotamia and Omana, in the Persian Gulf, were entrepôts and part of the network connecting to India and East Africa. Even though Arabs might have seen a decrease on their trade with the discovery of the monsoons and might have tried to jeopardise the trade in the Red sea²⁸, some important ports in the Arabian Peninsula became involved in this trade. Malao and Muza are two examples. The latter possibly was an important gateway in the network, just as Adulis in Eritrea, interconnecting wider regional and Indian Ocean scale networks²⁹. It might be possible that Arabs have sailed to Malabar

²⁴ Ray H. P. 2014: 589.

²⁵ Cobb M. A. 2014: 98

²⁶ Cobb M. A. 2014: 93.

²⁷ Casson L. 1980: 33.

²⁸ Thorley J. 1969: 213.

²⁹ Seland E. H. 2016: 199.

for centuries³⁰. Findings at Barygaza show an Arab maritime network between this location and the mentioned Muza and Cane.

Other authors such as Vegetius, Lucian and St Paul provide details of the journey between Italy and Alexandria. Vegetius explains that most of the sailing journeys took place between mid-April and mid-October. This meant that a journey to Alexandria in spring could return to Italy by late summer and rest the winter at Ostia, Pozzuoli or other Italian ports. Those vessels wintering in Egypt could also do the return journey to Italy in just one year. According to a study done by Duncan-Jones, news of Emperors' deaths and of their accession to the throne took between 27 and 52 days to reach Egypt, which provides an approximate time length for a journey Rome-Alexandria. The medieval Geniza documents state that it took between 17 and 35 days for vessels sailing from Sicily to Alexandria.³¹ Some of the boats returning from Alexandria would have taken the Northeast wind course to reach destinations such as Crete, Rhodes or other ports in Asia Minor, then go along Sicilian ports such as Syracuse and the straits of Messina to sail north to Puteoli or Ostia. Some of those long journeys could have taken up to 2 or 3 months, or even more, depending on the number of destinations visited and the time spent at each port.

A second important sailing route was the one connecting Alexandria and the East African coast through the Red Sea and around the Horn of Africa. This route would have head south, rounding the Horn of Africa to beyond the equator, reaching a point close to modern Dar es Salaam and the island of Zanzibar³². Other sources claim that Romans arrived to the port of Adulis in Axum and to Rhapta, in Tanzania³³. These locations connected some important inland trade routes with Axum. This sailing route would have been accessible to smaller vessels. Some of these ports, such as Rhapta, were very much connected to the Arabs, who exercised control of some of the maritime routes. Even the *Periplus* mentions Arab shipowners and sailors, which might indicate trade connections between Rome and South Arabia.

³⁰ Hourani, G. F. and Carswell, J. 1995: 33.

³¹ Cobb M. A. 2014: 94.

³² Parker G. 2001: 61 and 63.

³³ Fitzpatric M. P. 2011: 49.

Ports used during this period were Berbera, in present day Somalia or the unidentified Avalites, very near the straits of Bab Al-Mandab³⁴. Adulis and Aqaba, which might have been main coastal settlements during the kingdom of Axum, became involved on trade and therefore were part of the sailing route connecting Egypt and East Africa.

Sea voyages between the Red sea and India and the former and East Africa seemed similar. Both journeys used the monsoon winds and covered similar distances. However, while the journey to India took less time but was dangerous and difficult, the East African one took twice as long but it was a sailor's dream³⁵. The sailing in this route was so undemanding that nowadays is navigated by modest size Arab dhows³⁶. Boats to East Africa started at Myos Hormos or Berenike and sailed to Adulis (Massawa). From there, boats sailed along the Gulf of Aden rounding the Horn of Africa and down to Ras Hafun, continuing to the Menouthias Islands and finally to Rhapta. The journey involved short coastal hauls. Boats would have started the journey in July, sailing just during the day and taking them around 30 to 40 days to reach Cape Guardafui. There was no point to arrive earlier as they had to wait for the onset of the Northerly winds in mid-October or beginning of November. Then, helped by the monsoon, it would have taken them no more than two weeks without stops to reach the coasts of Zanzibar, arriving around November-December.

Once there, merchants had to wait no less than 8 months, as August would have been the earliest time when they could depart northward. The latest departure would have been September-October, towards the end of the Southwest monsoon period. On the return journey, the abrupt turn to the left heading west at Guardafui might have been a complicated one. According to Raoul McLaughlin (2010), the narrow channel around the island of Diodbros and a strong north current, made this part of the journey difficult. Vessels would have needed around 2 weeks to reach Guardafui and 30 to 40 days to navigate the Red sea. Merchants would have arrived in November-December at Red sea destinations, having 6 months to prepare for the next voyage. Therefore, a round trip lasted around two years³⁷.

Another important route to India went through the Persian Gulf, using various paths including the Tigris and Euphrates rivers, cities such as Petra, Bostra, Gaza, Antioch,

³⁴ Seland E. H. 2016: 193.

³⁵ Casson L. 1980: 27.

³⁶ Casson L. 1980: 31.

³⁷ Casson L. 1980: 30.

Palmyra or Damascus, connecting the East with the West through Mesopotamia³⁸. Parthian Stations described by Isidore of Charax indicate journeys from Palmyra to India, being militaristic mainly, but proving a connection through the Persian Gulf. Even though this route was very important during the 3300-2200 BC, it might have lost some importance during Roman times. The discovering of the monsoons might have brought a partial but not a total switch. The Gulf remained an alternative sailing route.

The total journey Red sea-Nile was about a third longer than the Persian Gulf-Syrian desert, but the overland distance between the Persian Gulf and the Mediterranean was four times longer than the one between Berenike and Coptos. The annual return journey using the Persian Gulf was a year or so, just as the Red sea-India monsoon voyage. According to Eivind H. Seland (2011), sea voyages from the mouth of the Indus to Furat, at the head of the Persian Gulf, would have been completed between the months of October and March and lasted for about 2 months. In the Persian Gulf though there were no time constraints brought up by Northerly winds. During July and August, only the so-called southern passage was available and between September and October, which was the time before the onset of the Northeast winds, the voyage was very tedious. Journeys anyway could be completed during those periods. Therefore, boats bringing goods to Palmyra would have reached destination at the Gulf anytime after mid-December.

The journey to India might have gone through Antioch and crossing the Euphrates River from Apamea or Zeugma, or alternatively to Palmyra and across the desert. The Euphrates and Tigris would have been navigated only in certain areas. These rivers are impetuous and have cataracts, which made them difficult to navigate, but favourable current and navigation conditions were encountered from Seleucia-on-the-Tigris and Ctesiphon onwards. Boats used might have been small as vessels with deep drafts were not able to navigate shallow waters³⁹. Rafts made of inflatable skins are attested in the area⁴⁰. The usage of boats in Mesopotamia shouldn't surprised us. A clay boat model found at Eridu in 3500 BC⁴¹ is one of the first pieces of evidence for the usage of boats. This journey to the Persian Gulf would have taken between 24 to 42 days.

³⁸ Cobb M. A. 2014: 92.

³⁹ Cobb M. A. 2014: 113.

⁴⁰ Seland E. H. 2011: 402

⁴¹ Stieglitz R. R. 1984: 135.

Once in the Persian Gulf, sailors could choose to sail in September from modern Kuwait with favourable southwest monsoon winds or to navigate along the coast to the Arabian Peninsula to its northern-eastern tip, just as Arab dhows did, and take the gentle northeast wind to reach India.

The return journey was taken with the same northeast monsoon wind to reach the southern Arabian coast. It is likely that return journeys were taken between January and April. At the sites of Ed-Dum in Unm al-Quwain, Dibba al-Hisn and Mleiha have been found Indian, African, Iranian and Mesopotamian materials, indicating Persian Gulf's involvement in this trade. Whether the Euphrates River was used at the returning journey or not is confusing. Contradictory views are found on whether the upstream sailing journey was easier or harder to accomplish⁴²⁴³. Parthia's presence in the area possibly affected using this route, but did not seem to have stopped it. Merchants using this route therefore reached the Mediterranean by late spring, ready to navigate the Mediterranean. This means that while Alexandria received goods in August-September, goods coming from Persia came in spring, which resulted on a constant flow of Eastern materials into the Mediterranean.

There must have been other sailing routes not documented by Western writers. Objects have been found at Berenike from places such as Sri Lanka, Vietnam, Thailand, Spain or even eastern Java⁴⁴. Ginger found at Alexandria might have come from Thailand or Java⁴⁵. Excavations in Red sea ports and at Arikamedu found Spanish amphorae associated with the trade of fish products, implying long voyages from the Iberian Peninsula to the East⁴⁶. Excavations in Sri Lanka, in places such as Tissamaharama, Mantai and Anuradhapura suggest that trade with the island happened since the third century BC. Other findings such as Nabatean ceramic at Thaj and Qatif, reveal that trade existed between the Persian Gulf and India⁴⁷.

⁴² Parker G. 2002: 70. For easy upstream journeys on the Euphrates.

⁴³ Seland E. H. 2011: 402. For hard upstream journeys on the Euphrates and along its river banks. The river banks were muddy during winter and spring times. Navigation relied on oars or boats towed from the riverbank, which would have been hard during flooding times especially in April-May. Camels might have been the best means of transportation as nomads and herds stayed between Iraq and Saudi Arabia in winter and early spring time.

⁴⁴ Sidebotham S. E. 2008: 305.

⁴⁵ Parker G. 2002: 44.

⁴⁶Bagnall R. S. 2003: 78.

⁴⁷ Seland E. H. 2014: 373.

Seland E. H. (2011) said that Southern Arabia played a key role in the trade of aromatics, such as myrrh and frankincense, with not only the Mediterranean but with India and Persian Gulf communities. Sailing vessels stopped on Arab ports to exchange and trade. Socotra, controlled by the kings of Hadramawt on the first century AD, became an important node connecting the various circuits of the Indian Ocean. Other South Arabian kingdoms that got involved were the Saba-Himyar, having the control of Bab al-Mandab and the Himyarite kingdom which controlled the straits of Aden.

Other Indian destinations that might have been part of Rome's network were Arikamedu, mentioned in Roman and Tamil literature^{48,49}, or other ports on the coasts of Gujarat, Maharashtra, South India, Sri Lanka and Andhra Pradesh. Gemstones, such as turquoise or lapis lazuli, were transported to Barbarikon from northeast Iran⁵⁰, Dwarka, Kamrej, the island of Nevasa and Elephanta⁵¹. Goods found at India, which came from Arabia and Axumite, denote the multitude of routes, ports and carriers trading in the Indian Ocean⁵².

The Ocean offered a trade that involved not just the Romans but many other political entities inhabiting the East. Among these groups were the Nabateans, Sabaeans, Homerites and the Arabs. I already mentioned Muza as a main Arab port. The Nabateans controlled Leuko Kome⁵³. Buddhists texts referred to merchants and princes who travelled across the sea in Southeast Asia, giving generous donations to Buddhist temples and spreading Buddhism and Hinduism⁵⁴. Rajan Gurukkal (2013) mentions the ports of Karur, Madurai and Uraiyur, which were controlled by the three chiefly lines of Cēra, Pāndya and Cōla. These chieftains founded the ports of Muziris, Korkai and Kaveri, where they established their coastal headquarters to trade with the

⁴⁸ Seland E. H. 2014: 372.

⁴⁹ Ray H. P. 2006: 119 to 120. Arikamedu is mentioned in the *Periplus Maris Erythraei*, as Poduke or puduceri, in Tamil language, which means new settlement. Archeological findings imply that this site and the Tamil coast extending from Vasavasamudram to Korkai was part of sailing destinations used in Roman times. This was a megalithic site used during the Iron age in which roulette ware found linked to a larger east coast network. This site covered from lower Bengal to northern Sri Lanka and across the Indian Ocean into Berenike and also to the coast of Bali.

⁵⁰ Bagnall R. S. 2003: 81.

⁵¹ Gaur A. S., Sundaresh, and Tripathi S. 2006: 126 and 127.

⁵² Seland E. H. 2014: 373.

⁵³ Ray H. P. 2014: 587.

⁵⁴ Ray H. P. 2006: 132.

Romans⁵⁵. These chieftains though were not in a position to manage such a complex trade, with the manufacturing of vessels and the resources required for those voyages. Indian sailors and traders might have accompanied the Romans in their voyages, as inscriptions found at Quseir al-Qadim, the ancient Leucos Limen and Albus Portus testify⁵⁶, but they did not seem to be in control of the enterprises.

Roulette Ware findings indicate connections also between Sumhuram in modern Oman and Tissamaharama in Sri Lanka. This trade would have started somewhere in the Ganges Valley and travelled along the eastern coast from Bengal to Sri Lanka to the southern tip of India, sailing from there to Sumhuram in modern Oman⁵⁷. The Periplus mentions ships from Ariace and large ships called Sangara and Colandia sailing the Ganges⁵⁸. Few adventurers sailed up the river to the Malay Peninsula and those journeys were done not just by Romans, but also by Indians as Brahmi graffiti scripts seem to suggest.

Chinese annals refer to people coming from the West. The Yun-Nan province had been part of China from 111 BC. It is from there that a trade route might have functioned. It went through the Yang-Tse River and overland through Central China to the Yellow River, connecting to the plateau of the eastern Tibet and to rivers such as the Tong-King and the Me-Kong, which connected with Burma. Once in there, the Kingdom of Shans might have played an important role in trading. There are evidences of trade between these kingdoms and people coming from the West. This network would have involved sailing to the Gulf of Martaban in Burma and following the course of one of the river valleys upstream. There is some confusion about the provenance of the mentioned Western people and whether they were Romans or not. W. H. Schoff (1917) stated that presence of Roman traders and sailors in the Bay of Bengal and on the China Sea were rare, just as a rare Marco Polo sailing to Kattigara from the West⁵⁹.

Not all Scholars agreed with this theory though. Matthew P. Fitzpatric (2011) mentions a route along the Indian Ocean, connecting the Mediterranean with the

⁵⁵ Gurukkal R. 2013: 195.

⁵⁶ Salomon R. 1991: 731.

⁵⁷ Pavan A. and Schenk H. 2012: 200.

⁵⁸ Hourani, G. F. and Carswell J. 1995: 33.

⁵⁹ Schuff W. H. 1917: 249.

Pacific. A sailing network that had the Indian subcontinent as linchpin. The How Hari'shu confirms a Sino-Indian (Roman) maritime route that avoided Parthian control. According to the Ying-Shi Yu, maritime trade by Han China prior to the Principate involved places such as Sumatra, Korea, and Japan. The Sung Shu and Liang Shu confirm connections in Cambodia and Annam with Westerners in their maritime trade during the Han period⁶⁰. This author mentions the usage of Indian rivers to reach southwest China, via the ports of Parthia and the rivers in the Indian Valley. These rivers would have been used by Arabs and Romans, sailing upstream to reach areas where silk was found. The How Hati'shu testifies Indians using these routes. The Wei-lue refers to routes terminating in the territory of the Kushans or through the Pamir Mountains, in Kapisa, where archeological findings from India, China and the Mediterranean have been found. All those sailing routes though passed near Parthian territory and therefore might have been dangerous to navigate them⁶¹.

Sailing routes then involved the Egypt-Red Sea-India, the Egypt-Red Sea-East Africa and the Mediterranean-Persian Gulf-India routes primarily, but there must have been lots of sub-sailing routes within this three main lines of connection and other journeys through land not included in this writing. This essay has tried to bring some light to some of the routes and the voyages that Romans and its partners used to trade East-West and vice-versa but more research is required to understand Eastern involvement and their relationships with Rome.

⁶⁰ Fitzpatric M. P. 2011: 45

⁶¹ Fitzpatric M. P. 2011: 44.

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