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THE ROAD TO THE INDIES. THE GLASS EVIDENCE

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Keywords: Roman economy, Indian Ocean trade, Roman imports, glass vessels. **Abstract**. The present study takes into discussion the trade relationships between the Roman Empire and India, reflected both in literary contemporary sources and in archaeological finds. Among the different material categories (pottery, bronze objects, coins), there are many glass vessels. The majority seems to come from Alexandria or Levant, but the high number glass vessels manufactured in western or Italian style, found in the western side of the Indian Ocean, reflects the amplitude and in the meantime the specific features of these trade connexions.

Rezumat. Studiul de față ia în discuție relațiile comerciale la distanță dintre Imperiul roman și India, reflectate atât în sursele literare ale vremii cât și în descoperirile arheologice. Între variatele categorii de materiale (ceramică, obiecte de bronz, monede etc.) se găsesc și numeroase vase de sticlă. Majoritatea par să fie de proveniență alexandrină sau levantină, însă numeroasele obiecte de factură occidentală și italică, descoperite în partea vestică a Oceanului Indian, reflectă amploarea și specificul acestor legături comerciale.

For the Greco-Roman world, gathered around the Mediterranean core, the idea of alterity was rather vague, and few were those who managed to grasp the true dimension of the world they lived in. Direct contacts were extremely rare; in this sense, I underline the essential role of commerce in the opening of these formerly unknown spaces². Benefiting from the period of peace, prosperity and technological boom following the instauration of Rome's domination in the Mediterranean, merchants focused on outlets situated as far as possible, but which could provide products inaccessible to the Roman world. A particular case is that of the

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² PARKER 2002, 90, supports the *Centripetal Dynamics Theory*, based on collecting data from the periphery toward the centre. In his words, "commodities helped map the world at a time when the Roman Empire was at an extent it had never before had, when the city of Rome was more of a cosmopolitan city than ever before."

Indian subcontinent, which had—especially in the first two centuries of our era—dynamic economic relations with the Roman Empire. The range of these relations is best depicted in ancient literary, papyrological and epigraphic sources. Besides Periplus Maris Erythraei - a fundamental source, a true "trade handbook" for the economic contacts with India can be mentioned also, other ancient works that underlined the importance and extent of these relations³ (figure 1). All these narratives help us understand better the importance that Romans paid to these commercial roads, rather difficult to cross in those times, but which represented one of the main sources for the importation of spices and exotic items4. This fascination exerted by the Orient on the Old World also intrigued emperor Trajan, of whom Cassius Dio states: "Then he came to the ocean itself, and when he had learned its nature and had seen a ship sailing to India, he said: 'I should certainly have crossed over to the Indii, too, if I were still young'. For he began to think about the Indi and was curious about their affairs, and he counted Alexander a lucky man⁵". Indeed, the fearless Macedonian leader was the one who opened the path of these direct contacts. His Indian campaigns continued even after his death; they captivated the imagination of the Romans, whose appetite for Indian goods was also stimulated by the ideas made on this little known and highly fascinating space⁶.

The Ptolemies of Egypt realized the political and economic importance of permanent links to Arabia and India. During the reigns of Ptolemy II Philadelphus and of his successors, the commerce became organized, and a series of ports were built at the Red Sea, the most important of which were Myos Hormos, Leukos Limen and Berenike; they facilitated transport by sea⁷ (figure 2). In parallel, the importance of Alexandria also grew significantly; once Egypt was transformed into a

³ Plin. N.H. VI. 26. 96-106; Diod. 2. 35-39; for discussions, see also PARKER 2002, 61-64.

⁴ TOMBER 2008, 16 – Horace and then Apicius describe in details the importance of pepper for food spicing; PARKER 2002, 40–95.

⁵ Dio Cass. LXVIII 29.1.

⁶ PARKER 2002, 55.

⁷ Mc LAUGHLIN 2010, 23-34; SIDEBOTHAM 1991, 12.

Roman province, Alexandria became the major gateway between the Mediterranean and the Orient⁸. Strabo reports: "And in fact the country has monopolies also; for Alexandria alone is not only the receptacle of goods of this kind for the most part, but also the source of supply to the outside world 9", while later, Dio Chrysostomos—in a speech addressed to the inhabitants of Alexandria—used amazing words to praise the city: "For your city is vastly superior in point of size and situation and it is admittedly ranked second among all cities beneath the sun. For not only does the mighty nation, Egypt, constitute the framework of our city-or more accurate its appanage—but the peculiar nature of the river, when compared with all others, defies description with regard to both its marvellous habits and its usefulness; and furthermore, not only have you a monopoly of the shipping of the entire Mediterranean by reason of the beauty of your harbours, the magnitude of your fleet and the abundance and the marketing of the products of every land, but also the outer waters that lie beyond, are in your grasp, both the Red Sea and the Indian Ocean, whose name was rarely heard in former days. The result is that the trade, not merely of islands, ports, a few straits and isthmuses, but of practically the whole world is yours. For Alexandria is situated, as it were, at the crossroads of the whole world, of even the most remote nations thereof, as if it were a market serving a single city a market which brings together into one place all manner of men, displaying them to one another and, as far as possible, making them a kindred people¹⁰".

In the words of Gary Young, all Rome did was to take over and encompass a system that had already been created and that turned out to be both functional and profitable¹¹. Strabo also pinpoints this: "In earlier times, at least, not so many as twenty vessels would dare to traverse the Arabian Gulf far enough to get a peep outside the straits, but at the present time even large fleets are despatched as far as India and the extremities of Aethiopia, from which the most valuable cargoes are

⁸ Mc LAUGHLIN 2010, 141; WARMINGTON 1928, 6.

⁹ Str. 17.1.13.

¹⁰ D. Chr. 32.36.

¹¹ YOUNG 2001, 18.

brought to Aegypt, and thence sent forth again to the other regions¹²". Warmington estimates that approximately 120 ships—mostly Egyptian—sailed towards India, Arabia and East Africa every year, and that they brought back highly valuable commodities¹³.

The discovery of navigable routes, represented another challenge for those who wanted to obtain Indian commodities without using intermediaries. The expeditions of Scylax, sent by the Persian king Darius to find the sea-route to the Indies, and of Nearchus—Alexander's admiral—who followed the same route, but from the other end¹⁴, were followed by that of Eudoxus of Cyzicus, whom Strabo describes as "a man inclined to admire the peculiarities of regions and was also not uninformed about them ¹⁵". Both his tenacity and his troubled existence can be compared with the life of Christopher Columbus. He wanted to find a new way to the Indies by sailing west from the Pillars of Hercules and by attempting to sail around Africa for the first time; however, he failed to achieve his plans¹⁶.

In regard to the route followed by Alexandrian merchants, it started from Alexandria, naturally, where commodities were stacked on ships and transported along the Nile up to Coptos. Coptos was the starting point of three land routes towards the Red Sea ports (the northern one towards Myos Hormos, the central one towards Leukos Limen and the southern one towards Berenike). They all included stations for rest and meals. Once arrived in the ports, commodities were packed and stacked on ships. From there, in the month of August, they crossed the sea towards Adulis (the main port of the Axumite Kingdom) and then towards Muza and Okelis. From there, some left towards the East African coasts, to Rhapta (in Tanzania), while others followed the Arabian coasts,

13 WARMINGTON 1928, 9.

¹² Str. 17.1.13.

¹⁴ Mc LAUGHLIN 2010, 23-24.

¹⁵ Str. 2.3.4.

¹⁶ Mc LAUGHLIN 2010, 25. The entire story is narrated by Str. 2.3.4–5, who takes over Posidonius.

towards India¹⁷. They came back during the winter, when they benefitted from favourable monsoon winds, and they followed the same route from the opposite direction.

Overall, this endeavour was extremely risky and equally expensive, reason for which we assume that benefits had to be significant.

The Roman State used various methods to protect the interests of its merchants and to ensure the fluidity of commercial trades. Whereas Trajan revived an older construction project for a navigable channel that linked the Nile to the Red Sea, his follower, Hadrian, decided to restore or build land arterial roads, such as the one linking Antinoe to Berenike¹⁸. Romans also undertook military actions: the best-known episode is the campaign of 25 BC, led by Aelius Gallus, the governor of Egypt. He "...was sent by Augustus Caesar to explore the tribes and the places, not only in Arabia, but also in Aethiopia, since Caesar saw that the Troglodyte country which adjoins Aegypt neighbours upon Arabia, and also that the Arabian Gulf, which separates the Arabians from the Troglodytes, is extremely narrow. Accordingly he conceived the purpose of winning the Arabians over to himself or of subjugating them. Another consideration was the report, which had prevailed from all time, that they were very wealthy, and that they sold aromatics and the most valuable stones for gold and silver, but never expended with outsiders any part of what they received in exchange; for he expected either to deal with wealthy friends or to master wealthy enemies¹⁹". Strabo²⁰ and later Cassius Dio²¹ narrate in

¹⁷ The most detailed description is that in *Periplus Maris Erythraei*, but one can also find useful information in Pliny (see note 3) or Strabo (see note 12). See also MEYER 1992, 46–50; CASSON 1984, 187; Mc LAUGHLIN 2010, 40–42.

¹⁸ YOUNG 2001, 61.

¹⁹ Str. 16.4.22

²⁰ Str. 16.4.22-24.

²¹ Dio Cass. LIII 29.3: "While this was going on, another and a new campaign had at once its beginning and its end. It was conducted by Aelius Gallus, the governor of Egypt, against the country called Arabia Felix, of which Sabos was king. At first Aelius encountered no one, yet he did not proceed without difficulty; for the desert, the sun, and the water (which had some peculiar nature) all caused his men great distress, so that the larger part of the army perished".

many details the campaign of Gallus; though he got to Marisamba, (Mariba, in Yemen) his campaign was a horrible failure.

Another interesting observation is related to the so-called "militarization of architecture" concerning the land roads that linked the Nile to the Egyptian ports, which became apparent starting with the second half of the first century AD, in the context of flourishing commercial relations²². Finally, during the reign of Trajan, a Roman fleet was established in the Red Sea to ensure the security of commercial routes. Furthermore, in the second century AD, on the Farasan Islands, situated at the Red Sea entry, there was a Roman garrison, a fact proven by the honorific inscription dedicated by Castricius Aprinus to the emperor Antoninus Pius²³.

The range of commercial relations between India and the Roman Empire is best reflected by the amount and diversity of commodities traded²⁴. In this paper, I focus on a succinct presentation of the categories of Roman commodities exported to India, with an emphasis on glassware.

Both ancient literary sources and archaeological discoveries from India showed that this area was the destination of qualitative pottery for the most part²⁵, but also numerous amphorae that contained mainly wines and Mediterranean oils²⁶. A special category is represented by a series of local production wares, discovered at Nevasa, Ter, Kondapur or Kolhapur, highly similar—in both shape and decoration—to the Achaemenid *kalyx*. It is very likely that these wares imitated similar Hellenistic-era items (especially Macedonian), inspired, in their turn, by Persian wares²⁷ (figure 3).

Bronze items are also well represented at Kolhapur, where a deposit was discovered, that comprised various types of statuettes (such

²³ Mc LAUGHLIN 2010, 80.

²² DE ROMANIS 2003, 119.

²⁴ See TOMBER 2008, 83–87, Table 1, for a detailed image of all imported merchandises discovered in the Red Sea ports; SIDEBOTHAM 1991, 22; PARKER 2002, 41–44.

²⁵ COMFORT 1991, 134–150, presents the *Terra Sigillata* wares discovered at Arikamendu, with trademarks known in Central Italy and Gallia.

²⁶ LYDING WILL 1991, 151-156; WARNER SLANE 1991, 204-215.

²⁷ BEGLEY 1991, 157–196, fig. 10.1, type 1.

as that of Poseidon), vessels, relief plates or mirrors — 102 objects, from Roman workshops. The size and variety of the deposit led to the hypothesis that the bronze items did not have a functional purpose, but that they were used to melt and reuse the metal, just like in case of coins²⁸.

Actually, Roman gold and silver coins are frequently encountered in archaeological discoveries in India. The ones of the first century AD predominate; often, they feature a line scratched over the emperor's effigy, which cancels their symbolic and propagandistic meaning²⁹. This massive currency transfer towards the outside managed to destabilize quite seriously the monetary resources of the Empire³⁰, a fact reflected in the writings of that period, by Pliny³¹ or Tacitus³².

In regard to the glassware, they were given due importance within the commercial trades with India. The main literary source on this matter is the same *Periplus Maris Erythraei*, which refers to three such categories of wares³³: (1) *millefiori* and mosaic wares³⁴, (2) regular wares³⁵ and (3) broken glass used for re-melting³⁶. All these categories are documented by the archaeological discoveries; though the whole picture may not be

²⁸ DE PUMA 1991, 101.

²⁹ DEO 1991, 40.

³⁰ See WARMINGTON 1928, 315–318, who discusses the impact of capital transfer on Roman economy.

³¹ Plin. *N.H.* VI. 26. 101: "It is an important subject, in view of the fact that in no year does India absorb less than fifty million sesterces of our empire's wealth, sending back merchandise to be sold with us at a hundred times its prime cost" and XII. 41. 84: "And by the lowest reckoning India, China and the Arabian peninsula take from our empire 100 million sesterces every year — that is the sum which our luxuries and our women cost us".

 $^{^{32}}$ Tac. Ann. III 53 — in the letter addressed to the Senate by Emperor Tiberius in AD 22, he reports on "the specially female extravagance by which, for the sake of jewels, our wealth is transported to alien or hostile countries".

³³ PARKER 2002, 175; STERN 1991, 113.

 $^{^{34}}$ PME 6, 7, 17 — where it appears under the name of $\lambda\iota\theta$ iας $\dot{v}(\alpha)\lambda\dot{\eta}$ ς $\pi\lambda\epsilon$ iovα, $\dot{v}\alpha\lambda\dot{\eta}$ $\lambda\iota\theta$ iα or $\lambda\iota\theta$ iας $\dot{v}\alpha\lambda\dot{\eta}$ ς, which literary means "crystal stone". It is also mentioned that they come from Diospolis (Thebes). However, there are other interpretations according to which this "crystal stone" does not refer to the stones per se, but probably to the glass objects that imitated stone: beads — WHITEHOUSE: 1989, 155.

³⁵ PME 39.

³⁶ PME 49, 56 — called \mathring{v} ελος άργή.

complete and the publication of items turns out to be incomplete, a series of interesting observations can still be outlined. In this sense, I had the opportunity to consult the glass material for a series of important sites. I refer here to Khashm el-Minayh (*Didymoi*), Al-Muwayh (*Krokodilô*), Umm'Balad (*Koiné Latomia*) and Al-Zarqâ (*Maximianon*)³⁷ — situated in the Egyptian desert, on the linking routes between Coptos and the Red Sea, to Quseir al Qadim³⁸ (identified by some with *Myos Hormos*³⁹ and by others with *Leukos Limen*⁴⁰); Aqaba (*Aila*)⁴¹ and Berenike⁴² — ports situated on both shores of the Red Sea; Heis (*Mundu*)⁴³ — on the northern Somalian coasts; Umm al-Qaiwain (*Ed-Dûr*) — in the United Arab Emirates and, on the other hand, the sites of India and mostly Arikamendu⁴⁴. Regarding Adulis and Aksum (on the east African coast), the article dedicated to glassware focuses rather on the difficulties related to its transport and it hardly mentions the types per se, which did not allow me to use it here⁴⁵.

Depending on the characteristics of the glass material discovered in the aforementioned sites, a series of distribution patterns can be outlined within distinct, but interconnected areas. The first comprises the sites situated in the Egyptian desert and the ports on the Egyptian coast of the Red Sea. The second comprises transit points such as the coasts of Somalia and of Arabia, while the area is represented by India. Within the first area, the glassware probably comes from Alexandria and it comprises common, daily use forms, characteristic to the first two centuries AD. As expected, the most numerous ones are ribbed bowls (Quseir, with 63 items, Aila, Didymoi), characteristic especially to the first century AD. Another specific and highly diffused shape is the dish with everted lip, made of whitish glass, sometimes decorated by cold-cutting (type AR 16-

³⁷ BRUN 2003, 377-387.

³⁸ MEYER 1992.

³⁹ TOMBER 2008, 57; BRUN 2003, 377.

⁴⁰ YOUNG 2001, 42; MEYER 1992, 4.

⁴¹ DUNCAN-JONES 1998, 147-150.

⁴² NICHOLSON 1998, 151-155; NICHOLSON, PRICE 2003, 389-394.

⁴³ STERN 1985, 23-36.

⁴⁴ STERN 1991, 113-124.

⁴⁵ PHILLIPS 2009, 37-47.

Trier 23). Dated to the second century, it is considered that this type belongs to Alexandrian artisans; it is frequently encountered at Quseir (20 items), Didymoi, Krokodilô, Koiné Latomia, Maximianon, and Aila, which proves that this type was one of the most common commodities for export.

Other forms disseminated here are as follows: conical beakers decorated with honeycomb pattern (type IS 21), with the same decorative and fabric composition characteristics as the aforementioned dishes encountered at Quseir, Krokodilô, Koiné Latomia and Berenike; eggshaped beakers decorated with glass filament (type AR 54–IS 33) at Quseir, Krokodilô, Maximianon; beakers with globular body, decorated with incisions on the outside (type AR 40) at Quseir, Krokodilô, Maximianon; beakers with concave walls (type IS 32) at Quseir, Krokodilô, Maximianon; sack-shaped jars, with slightly flaring lip (type AR 104–IS 94) at Didymoi and Quseir; prismatic bottles (type IS 50) at Quseir, Krokodilô, Maximianon; aryballoi at Quseir, Krokodilô, Maximianon and others.

Among the particular items, the attention is drawn mostly by two bowls decorated by incision, with mythological scenes (the so-called *Mythological Cups* or *Hero Cups*), which represent the bust of a hero within a round medallion, framed by a stylized laurel wreath. These items are from Quseir⁴⁶ and Berenike⁴⁷. Harden holds that these items are from Alexandria (possibly from the workshop of the same artisan) and he dubs them extremely important, for having been among the last Egyptian glassware exported towards the west, in the second century AD. Furthermore, the British scholar believed they were the inspiration source for the later western tableware with incised decoration⁴⁸. Carol Meyer mentioned 23 such vessels, dated approximately to the second half of the second century AD, diffused throughout the entire Roman Empire, even

⁴⁶ MEYER 1992, 22-24, no. 87-88.

⁴⁷ NICHOLSON 1998, 151-152, no. 1.

⁴⁸ HARDEN 1960, 46–47.

to Britannia; he also underlined the influence of Alexandrian glass artisans and carvers (*diatretarii*) in the production of luxury tableware⁴⁹.

Berenike is the place of origin for another stupendous item. It is a large-sized, clear-glass bowl painted with marine life motifs⁵⁰. Dated to the first century AD, the item is remarkable form several perspectives. First, by its refinement and originality: marine scenes of such type are encountered only at Xanthen and Oberwinterthur⁵¹. Secondly, the two western cups belong, like most painted bowls, to the Hofheim–Isings 12 cups, while the item in question is bigger and less rounded on the outside. Finally, it is worth underlining the clearness and high quality of the glass paste, compared to the other items.

Didymoi is the place of origin for a large-sized dish fragment decorated with vegetal motifs and poppyheads, dating to the second half of the first century AD; it was probably an Alexandrian product, too⁵².

Finally, at Berenike two other small fragments were discovered of what appears to be cameo glass⁵³. If the identification is correct, then the item is most probably Italic and it dates to the first half of the first century AD. Its discovery in the remotest Egyptian port of the Red Sea underlines the large circulation areas of the luxury tableware, as well as the type of traded commodities.

The second area in question is represented by the transit space of merchandises towards the eastern African coast, on one hand and India, on the other. The two settlements—Heis in Somalia and Ed-Dûr in Arabia—have provided remarkable glassware discoveries (figure 4). In both settlements are encountered the famous ribbed bowls. Among them, a white opaque fragment from Heis, similar to the items discovered at Poiana. These vessels seem to have a northern Italic origin, a fact confirmed by both the discoveries of Aquileia and their low representation in the other areas of the empire. On the Somali coast, it is

⁵⁰ NICHOLSON, PRICE 2003, 390–391, no. 1, fig. 1 a/b.

⁴⁹ MEYER 1992, 23–24.

⁵¹ RÜTTI 1988, 46-52, no. 694

⁵² BRUN 2003, 379-380, fig. 2/10 and 4.

⁵³ NICHOLSON 1998, 153, fig. 2.

encountered alongside numerous hemispheric *millefiori* or mosaic items. I believe their place of production is uncertain, though *PME* 6 holds it was Thebes (Diospolis). Though the Egyptian origin is much more plausible, they may have also been brought from Italic workshops, specialized in such types of vessels; however, in the lack of more consistent evidence, this hypothesis remains only a speculation for the moment.

Concerning the vessels from Ed-Dûr, the situation is more diversified. Whitehouse has published a consistent sample of 122 items, which he dated approximately because 25 BC and AD 75; he supported an Egyptian or Syro-Palestinian origin for them⁵⁴. Though a part of them could have been produced in Egypt, numerous vessels seem to have been brought from Levantine workshops. There are many such hemispheric moulded vessels, such as the ones of Tel-Anafa, short ribbed bowls, monochrome or mosaic ribbed bowls, jugs with one and two handles, glass amphorettes, a cluster-shaped vessel or date-shaped or fish-shaped unguentaria. Most of these items are typical products of the Syrian workshops, reason for which we have to take into account a different entry path. Whitehouse suggests they would have been produced on the Syro-Palestinian coast, from where they would have been transported towards Palmyra. Instead of heading towards east, the commodities were shipped on the Euphrates to Charax and from there—by crossing the Persian Gulf—finally to Ed-Dûr and Mlehia⁵⁵. Among the arguments meant to support this hypothesis, I foremost state the fact that Periplus Maris Erythraei mentions only a few times the Persian Gulf. This suggests that it was not a custom for ships to make a stop there; secondly, the discoveries of Palmyra⁵⁶ and mostly of Dura Europos⁵⁷ — where the material excavated presents numerous similarities and analogies with the one on the eastern Arabian coast.

Finally, the third area in question is represented by India. Here, evidence is rather scarce, especially concerning Roman glassware. Besides

⁵⁴ WHITEHOUSE 1998. 64.

⁵⁵ WHITEHOUSE 1998, 66-67.

⁵⁶ See GAWLIKOWSKA, AS'AD 1994, 5-36.

⁵⁷ CLAIRMONT 1963.

the five ribbed bowls discovered at Arikamendu (3 items), Dharanikota and Taxila in south-eastern India, Marianne Stern mentions two other bowl fragments also discovered at Arikamendu⁵⁸. About the last item, of clear blue glass, the author says it is Egyptian based on an analogy discovered in a royal tomb of Barkal, in Sudan⁵⁹. Recent research conducted at Guanxi in China had nevertheless, surprising results: it demonstrates that the Arikamendu item is actually Chinese, not Egyptian⁶⁰. This rather surprising aspect demonstrates that India was at the crossroad of Roman and Far East influences, though the two never interacted directly.

Besides these fragments, I have no knowledge of others. The rest of discoveries were either coloured glass beads (especially in the Deccan Plateau, at Paithan, Ter or Nevasa) alongside shards of unidentifiable vessel lips, or broken, unprocessed glass (mostly on the south-western coast of India, at Tundis and Muziris)⁶¹. The flourishing commerce with unprocessed glass—also underlined in *PME* 49 and 56—is reflected in the abundance of such finds in India, but also in the discovery—in Egypt, at Maximianon, on the path towards the Red Sea—of two unprocessed glass blocks⁶² (figure 5).

As a conclusion to this brief presentation of glassware discoveries from Egypt towards India, it can be stated that a flourishing commerce with such commodities did exist, especially in the first two centuries of our era, a fact underlined also by the important aforementioned source. The most numerous and diverse ones are the discoveries made in the east of Egypt; they emphasize on both the types of items preferred for export and the artistry of the artisans. The luxury tableware was most probably destined to the Indian elites and—by the magnitude of commercial trades—glass was one of the main exported commodities of the Roman Empire. Surprisingly though, the discoveries of this area are quite

⁵⁸ STERN 1991, 117, fig. 6.8 and 6.9.

⁵⁹ STERN 1991, 117 — he dates the funerary complex between 21 and 13 BC.

⁶⁰ BORELL 2010, 131.

⁶¹ STERN 1991, 115-116.

⁶² BRUN 2003, 387.

disappointing, but one should take into account that the amount of archaeological research has also been rather modest.

Reflected by both the literary sources of the time and the archaeological artifacts, the long-distance commerce between the Roman Empire and India shows the existence of a constant flow of commodities between the two regions. As an integrant part of this commerce, the glass tableware represents an important indicator of the Roman influence and of its image on the Other.

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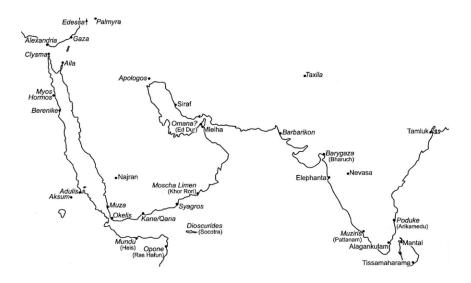


Figure 1. Map of the main ports involved in the Indian Ocean trade, after TOMBER 2008.

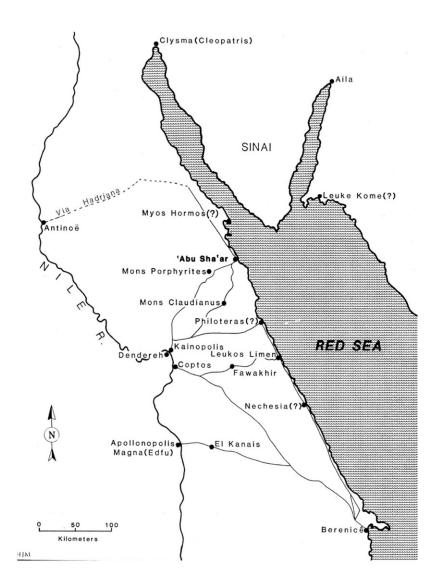


Figure 2. The main ports from the Red Sea and the commercial land routes that supplied them, after BEGLEY 1991.



Figure 3. Indian ceramic cup with a decorative motif inspired from the Hellenistic art, after BEGLEY 1991.

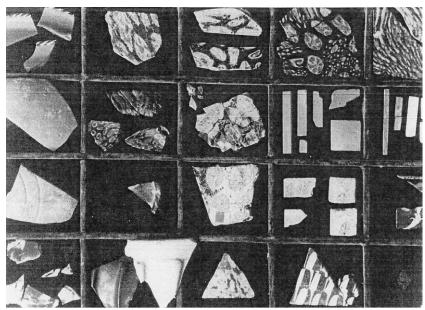


Figure 4. Glass fragments discovered near Heis in northern Somalia – after BEGLEY 1991.

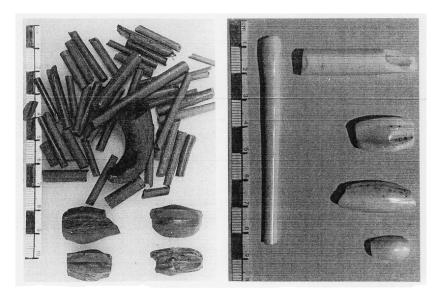


Figure 5. Glass waste from Arikamendu and Papanaidupet – after BEGLEY 1991.