

# *Eastern Trade of the Roman Empire based on Pliny the Elder's Natural History*

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## *Topic, aims and methods*

My PhD thesis investigates the ancient long-distance trade between India and the Roman Empire, its routes, products, and social and cultural effects based on written sources and archaeological findings, principally in the time of the early principate. My research is based on the study of Pliny the Elder's *Natural History*, Book VI. This book contains a geographical description of Asia, its people and commercial routes. In my thesis India, Taprobane, and Arabia are given extra attention. I give the Hungarian translation of the description of these areas supplemented with notes. I have also studied Pliny's other books mentioning oriental trade, primarily those on plants, animals, and gems as well as literary and other Greek and Latin sources, such as *papyri*, inscriptions and *ostraca* from the days of the principate. I used research reports to study archaeological findings. On the basis of the *Natural History* I also examined Pliny's personality, his personal views and social status. I studied his personal relations to the dynasty in power. His personal opinion considering the Romans who participated in long-distance trade and those who made use of the imported luxuries also constituted part of my interest.

The aim of my thesis was to study the economic, political and cultural links between the ancient Mediterranean and Oriental worlds and also to analyse the effects of these connections on the social, economic, and cultural relations within the Roman Empire. The fact that the age of Pliny the Elder, the 1st century A. D. was the great age of long-distance trade in the Roman Empire contributed to my choice. Several events of the 1st century B. C. stimulated the increase in oriental trade. Hippalus discovered the monsoon winds characteristic of the Indian Ocean. Pompey eliminated Mediterranean pirates, who had caused significant problems earlier. Navigation techniques had developed. The economic and political measures of Augustus, imperial peace, and wealth had all contributed to the flourishing of long-distance trade. According to the contemporary political status quo, Romans preferred sea routes, as a most land routes were controlled by the Parthian Empire. Besides Pliny's *Natural History* several literary and other sources tell us about the relationship between the East and the Roman Empire. However,

it is important to note that these sources only mention these relations. When choosing the topic, I also considered the fact that very few of Pliny's 37 books have been published in Hungarian. Some passages from books I-VI, XII-XXI and XXXIII-XXXVII are available (Plinius: *A természet története. Válogatott részek az I-VI. könyvekből.* [Pliny: *Natural History, Selected passages from Books I-VI*] tr. K. Váczy, Bucharest 1973; *Plinius a növényekről. Részletek a XII-XXI. Könyvekből* [Pliny: *On Plants. Excerpts from Books XII-XXI*]. tr. S. Tóth, Budapest 1987; translations of E. Máthé, from books XXXIII-XXXVII in anthologies: *A görög művészet világa* [The World of Greek Arts] (Budapest 1962) and *A római művészet világa* [The World of Roman Arts] (Budapest 1974). The Hungarian translation of a complete book from the *Natural History* was published in 2001 [Books XXXIII-XXXVII on minerals and arts (Darab-Gesztelyi 2001)]. Foreign translations and comments are not complete either. The Budé series published Volume 2 of Book VI in 1980, containing the text and translation of chapters 18-26, together with notes and a thorough study. In the past 25 years, however, the previously promised further 2 volumes containing chapters 1-17 and 27-39 have not been published. When choosing the topic of my thesis I considered the fact that the eruption of Vesuvius in 79 A.D. (which caused the death of Pliny) provides us with a clear picture of the contemporary life of Pompeii, of the objects they used and their prices, giving us an idea of the way of life and arts in the Roman Empire in the 1st century A.D. In the past decades several *papyri* and *ostraca* with records proving transit trade have surfaced in Egypt. In 1980 a *papyrus* was found in Alexandria and it was published in Vienna 5 years later (1985). This *papyrus* is the most important written evidence on the trade between India and the Roman Empire. International excavations are being carried out in India and the findings and results are published continuously. However, these are only fragments, studied and processed by internationally reputed experts, as it is the only way to determine when and where in the Roman Empire the given amphora was manufactured, how it was transported and what it contained. New scientific research methods also promote the better understanding of trade in the 1st century A.D. My thesis makes use of these findings. The fact that the only significant monograph on the Roman-Indian trade to day is that of Warmington from 1928, published again in a virtually unchanged form in 1974, also contributed to my choice. The topic has not been studied in Hungarian.

During my research I wished to answer the following questions: When did the oriental trade of the Roman Empire start? What routes did the trade involve? How long did the journey take? What do we know about contemporary shipping? Where were the most important ports? Who were the traders? What was their financial background like? What products did they trade in? How much did the transport cost? Who could afford these products? What amounts of the various commodities did the Roman Empire need? How much did the goods cost? What did the Romans pay with? How did the oriental trade affect the Roman economic and financial situation? What did the Romans know about the East, India, Taprobane, and Arabia? How extended was the geographical horizon of the Romans during the principate? What Western products reached India? Did they

have any detectable effects? To what extent did the state interfere with trade – did it help or hinder it? What taxes do we know of? How did the oriental trade change the everyday life and habits of Roman citizens? What changes can we notice in the society? Can we detect any cultural effects either in India or in the Roman Empire? How did the Romans' image of India change in the 1st century A.D.? What was Pliny the Elder's personal opinion of oriental trade, of the people involved and of the Romans who made use of these Eastern products? Does he criticise the society of his age in his works? What characterises his relationship to the dynasty in power?

During my research my aim was to perform a comprehensive analysis of the available sources. I have tried to follow the principle originating from Theodor Mommsen but first expressed by Géza Alföldy: The study of antiquity is a comprehensive science, and Classical philology, the study of inscriptions, numismatics, archaeology and papyrology are just subspecialties of the same field – one has to aim at a complete historical overview and make use of everything that is available. As a historian also qualified in Latin, I have followed the advice of Gyula Wójcilla when concentrating on Pliny's work. I translated, interpreted and prepared notes for the passages of the *Natural History* that deal with the East. During the translation I had difficulties with the frequently archaic use of the language, with words that turned up only once (*hapax legomenon*), geographical places that can no longer be identified, names of tribes, foreign terminology and elliptic structures. Pliny compiled his encyclopaedia based on 2,000 texts of more than 100 Greek and Roman authors and he made no attempt to unify the various styles of the different authors. This fact presented an additional difficulty in translation. When preparing the notes I had to gain some expertise in the field of various specialties from astrology through the production of glass and the use of spices to fine arts. I also focused on other contemporary written sources, especially on *Periplus Maris Erythraei*, which was probably written in the days of Pliny and also on Strabo's *Geographica*. On the basis of the above principle I also tried to make use of the ever-increasing number of other sources, namely inscriptions, *papyri*, *ostraca*, coins and the findings of archaeological excavations. These fragmentary sources also helped to cast new light on the written sources.

### Results

The route of sea trade between the ancient Mediterranean world and India included Egypt and the Red Sea. Trade connections had been present before the Roman era; however, the conditions for extensive long-distance trade were only established by the imperial Roman Empire. According to Strabo, in the age of the Ptolemies few had the courage to sail to India for goods; before the time of Augustus not even 20 vessels risked the voyage across the Arabic Gulf (northern part of the Red Sea) (Strab. 17, 1, 13), while during the reign of the *princeps* 120 vessels left Myos Hormos for India (Strab. 2, 5, 12). A *papyrus* discovered in Alexandria in 1980 and published in Vienna in 1985 proves that by the 2nd century A. D. the merchants of the Roman Empire had learnt the precise trade route from Alexandria to Coptos, from Coptos across the desert to a port on the Red Sea, and

further on to India. According to the text, the long and dangerous voyage was planned cautiously. The *papyrus* records the lend-lease contract of a vessel, which reveals the existence and use of sophisticated legal transactions.

Excavations in India have revealed many remains of ancient Roman objects, which have been published in research reports. However, the findings and results of various specialties have not been compared and summarised yet. Based on the examination of goods of Roman origin and that of literary sources we can find several differences between North and South India. There is a difference between the range of exported and imported goods, and especially between the characteristics of merchant communities. In the north, trade was directly supervised by local rulers, who controlled commercial interactions with the help of their agents. In contrast, the southern kingdoms preferred free trade, based on agreements with western merchants. These southern areas reveal obvious signs of foreign colonies. The rulers from north purchased luxury goods from the West: excellent wines, expensive clothes, precious silver ware, reputed remedies, musically talented slaves and pretty female slaves. The southern areas preferred simple clothes, copper, leather, coral, wine, and money. Even goods made of glass show a different distribution: the northern regions required glass dishes, which were considered luxurious at the time, whereas the southerners bought raw glass. From the ports of Muziris and Nelkynda on the southwest coast of India, semi-prepared blocks of glass were forwarded to the cities of the east coast.

In the initial periods of the commercial exchange between India and the Roman Empire (during the reigns of Augustus and Tiberius) the Romans used to pay for the Eastern luxuries mainly with gold and silver coins. Tiberius indignantly mentions that the money of the empire is taken by foreigners in exchange for gems to please their women (*Tac. Ann.* 3, 53). Pliny estimated that India drained away at least 50 million *sestertii* annually (*Plin.* 6, 26, 101). In another book he indicates that the trade with India, Arabia, and China deprived the empire of 100 million *sestertii* every year (*Plin.* 12, 41, 84). Archaeological findings support the estimation of literary sources. According to estimations, 5400 *denarii* and 800 *aurei* have been found in India. The coins were not only used as a means of payment; due to their value and high content of precious metal they were also collected as treasure. This was the situation during the reign of the Julio-Claudian dynasty; however, the financial reforms of Nero and the reduction in the silver content of the *denarius* changed this tendency.

Archaeologists have also found some Roman coins in India that had two holes near their edge or a ring welded on them. Thus, we can draw the conclusion that Roman coins were also used as jewellery. Coins transformed into jewellery were also worn in the Roman Empire; such findings have surfaced near Alexandria in Egypt and in other imperial provinces. If we examine Indian coins, it turns out that the technique and illustration of Roman products were copied by local craftsmen. Indian money, ceramics and glass objects from the subsequent periods reveal Roman influence.

Besides Roman coins of precious metal, raw blocks of glass were also shipped to India. Raw glass may have functioned as ballast aboard vessels struggling with

monsoon winds. According to Casson, Roman products arriving at South Indian ports were unloaded from the marine vessels and shipped on local boats across the dangerous crossing full of reefs between Taprobane and Cape Comorin. Findings of glass and coins, however, indicate a more significant route overland through the pass of Phalgat. This route suggests an overland connection between the southwest and east coasts of India. The area has several mines rich in beryl. Beryl was a popular type of gem during the reign of the Julio-Claudian dynasty. Most coins were found no further than 3 miles from the mines and almost all of them were minted in the time of the Julio-Claudian dynasty. Apart from mining, this region was also famous for its black peppercorns, which were also considered a luxury in the West. Raw glass was probably also transported by land to the eastern cities of Arikamedu and Kudikadu, where the vast majority of glass beads was manufactured. Archaeological findings suggest that raw glass was processed in these two cities. Glass beads produced here reached not only the rest of India but also the southeast Indian islands; apparently the most important bead manufacturer of the region was Arikamedu. A commercial settlement discovered on the island of Bali in the 1990s discovered 79 potsherds among other things. Investigations of the material and the Brahmin inscriptions on the surface of the potsherds proved the existence of a commercial link with Arikamedu in the 1st century A.D., exactly the heyday of trade relations between India and the Roman Empire. Spices, animals and minerals were taken from Indonesia to India and subsequently some of these goods were forwarded to the Mediterranean world. Thus, it can be concluded that India acted as a mediator between the Western world and the southeast Indian islands. Products from the Roman Empire and the technology to manufacture such metal- and glassware were introduced on the islands, and the treasures of Indonesia were forwarded to the West. Therefore, a well-arranged system of world trade seems to have been functioning in the 1st century A.D. connecting Hispania through the Mediterranean Sea, Egypt, Red Sea and the Indian Ocean with India and the southeast Indian islands. Arikamedu and other east Indian *emporium*, where people of Mediterranean origin settled, played a central role in this trade. New pieces of information reached the western world from the southeast Indian islands; however, the expansion of the geographical horizon cannot be detected in literary sources: the eastern border of the inhabited world continued to be India, the Ganges River and the *mare Eoum* in the 1st century A. D.

Amphora fragments from the Mediterranean world have surfaced in many parts of India. The vast majority of these fragments belong to Dressel Forms 2-4 amphorae, which originated from the region of Campania, the most famous grape-growing area in ancient Italia. The *Periplus Maris Erythraei* and the *ostraca* of the Nicanor archive also confirm that Italian wine was transported to India. According to Ruffing, the excellent quality of these wines together with the length and complexity of the transport made the wine so expensive that only very wealthy people could afford it. Only rulers and members of the privileged classes could afford to buy it, therefore it might have served as a symbol of social status as well. Inhabitants of Mediterranean origin can also be considered to have

been consumers of the Italian wine, so if they could afford it their role as mediators must have earned them a considerable amount of money. Dressel Forms 6 and 20 amphorae have also been identified; they were used to store olive oil. This latter type of pottery contained olive oil from Hispania, but potsherds originating from the Istrian peninsula have surfaced as well. Dressel Forms 7-8 amphorae have been found in Arikamedu as well - these pots were used to store *garum*, a type of salty fish sauce. The scale of olive oil and *garum* export was probably lower and - just as in the case of wine - it must have satisfied the needs of Roman subjects living in ports and commercial settlements. According to the *Periplus* even wheat was taken to India for Roman settlers and seamen, while the locals preferred rice.

On the basis of the sources we can conclude that the trade between India and the Roman Empire was arranged by individuals. Tax records, inscriptions, *papyri* and *ostraca* suggest that marine companies operated on the Red Sea. Making loans for sea trade, the so-called *pecunia traiectica*, was a popular form of business. *Societates* and *pecunia traiectica* did not exclude one another as the latter one primarily supported private transport. According to Rougé, major merchants, transporters and companies did not take out such loans. Companies were managed by people who had the means to equip and staff vessels capable of crossing the Red Sea and the Indian Ocean. These enterprises also built and maintained ships. The heads of these companies are referred to as *naukleros* in the inscriptions. The Greek term *naukleros* means a rich ship owner, entrepreneur or captain, its Latin equivalent is *navicularius* or *naulerus*.

The Red Sea trade was very profitable, therefore, we should not suppose that wealthy Romans from the higher ranks of society had no interest in it. However, *lex Claudia* from 218 B. C. made it impossible for *senators* to own commercial vessels that could potentially carry more than 300 amphoras. Thus, aristocrats were theoretically banned from long-distance sea trade. Nevertheless, the letters of Cicero mention two *senators* whose commercial connections can be proved (Cic. *Ad fam.* 12, 29; *Ad Att.* 14, 12, 3; *Ad Att.* 5, 2, 2; *Ad Att.* 15, 29, 1). D'Arms's report on a sunken Roman vessel proves the commercial connections of *senator* C. Sempromius Rufus, named by Cicero. The commercial activity of the other named *senator*, P. Sestius, a landowner from Cosa, can be proved with the cargo of an ancient Roman vessel that sank near Marseilles but was lifted from the seabed in 1942. 1700 amphoras with the inscriptions 'SES' and 'SEST' were found on the ship. The amphoras were also marked with the following symbols: anchors, five-pointed stars, palm-leaves, tridents, axes and crowns. These inscriptions and symbols were also found on amphoras near Cosa. Thus, both literary and archaeological findings support the involvement of *senators* in trade.

The extent to which the state interfered with long-distance trade has not been clarified yet. There is only indirect evidence to support the participation of the Roman Empire in the Red Sea trade. The Romans built roads, ports, and bulwarks east of the Nile in the desert that extends to the Red Sea. Roman soldiers were garrisoned in the Eastern Desert and a significant number of stone quarries operated in the area. Archaeological evidence supports the presence of emperors

here: in Myos Hormos a list containing the names and detailed provisions of freedmen and slaves was found on potsherds. These people were probably involved only in administration and not in trade. The Roman Empire had a considerable number of officials in the region. These officials were responsible for supplying the garrisons, the organisation of administration, the collection of taxes and also for sea and caravan trade. The *praefectus montis Berenicidae* was the head of the offices responsible for trade, and he was directly answerable to the *praefectus* of the province. His subordinate was the *arabarches*, who collected taxes from vessels and caravans. Obviously, more officers were needed to carry out this task. Some inscriptions also mention the title *paralempetes*, which was different from that of the *arabarches*, however, the function of the former is not clear. According to some theories, he could have been stationed in Coptos to collect the tolls there, while the *arabarches* collected money in the ports from vessels arriving from India. Sailors coming from the direction of India had to pay the most customs duties in Alexandria. The tax here was called *tetarte*, which meant 25% of the value of the transported goods. The oriental trade was primarily maintained by the demands of wealthy Romans for luxuries, although the state did earn a significant income from customs duties.

Only members of the Roman aristocracy could afford the expensive oriental luxuries. Therefore, Pliny's criticism of luxury was mainly aimed at this social rank. The gems needed for jewellery, pearls, creams, perfumes, and expensive fabrics satisfied the needs of aristocratic women. Pliny makes negative remarks on the lifestyle of women in accordance with the conservative, antifeminist views of his model of excellence, Cato the Elder. Pliny's criticism did not fail to include women from the family of the emperors; his works mention the spending of the wives of Caligula, Claudius, and Nero. Apparently, he did not dare to mention the female members of the Flavian dynasty by name. Besides aristocratic women, Pliny also criticised the luxurious way of life freedmen led. Among the wealthiest men of the 1st century A.D. we can find some influential freed slaves of the emperor, such as Licinus, Narcissus, Pallas, and Callistus. The growing influence of freedmen not only included the social sphere but the field of economy as well. Inscriptions also suggest that the social status, wealth and acceptance of goldsmiths, *margaritarii* (pearl dealers), *unguentarii* (perfume manufacturers) involved in the oriental trade increased significantly in this period. Pliny's younger contemporary, Petronius also comments on the social problems of the century in his *Satyricon*, criticising the wealth and luxurious way of life of freed slaves and their increasing influence in political and economic matters.

One of the most important parts in Pliny's Book VI is the description of the island of Taprobane. Envoys from the island first came to Rome in the 1st century A.D. Historians have still not agreed on the emperor under whose reign the event happened. Personally, I cannot accept Schwarz's assumption that the *libertus* disembarked on the island in the days of Augustus. Analysis of the text makes the reign of Claudius or the time preceding his reign more likely.

The description of such a remote island makes it possible for Pliny to draw attention to the social and moral problems of his age. The idealistic world of justice

and good morals in Taprobane is contrasted to the displeasing relations in the principate. In my opinion, the sentence in connection with the election of kings on the island refers to the most serious problem of the Flavian dynasty, namely, to the power being hereditary: *eligi regem a populo senecta clementiaque, liberos non habentem, et, si postea gignat, abdicari, ne fiat hereditarium regnum* (Plin. 6, 24, 89). Vespasian had made it obvious from the beginning of his reign that he was going to be succeeded by his sons, and he insisted on this decision regardless of the fierce objection of *senators*. In the 1st century A.D. the most important theoretical base of the opposition came from cynic and stoic philosophers, who frequently emphasized the difference between kingdom and tyranny in their speeches. In their opinion the main difference between a king and a tyrant is that the power of the former is granted by the gods, the king being chosen by the gods as the most potent and excellent one. They emphasized ability in contrast to birth and they stated that the power of a king may not be inherited. With the help of this ideology, the opposition wanted the senate to be given the right to elect the new emperor from among the most suitable men. This way they strongly opposed the inheritance of the power and the dynastic plans of the emperors.

Pliny not openly opposed the dynastic plans of the emperor, but his works reveal his republican feelings and stoic thoughts. Book VI emphasizes that he considers the life of these remote people as an example, as their king is elected by the people themselves, making it impossible for a ruler to pass the power on to his son, thereby expressing his own opinion considering the imperial ambitions of his age. This view could not fail to have an influence, as after the extinction of the Flavian dynasty, Pliny the Younger expresses the same idea in his *Panegyricus*, rejecting the hereditary feature of succession and emphasizing the virtues of adoption instead.

On the basis of the above it may not be questioned that the works and ideas of the pro-republican Pliny played a significant role in the fight of the senate and other intellectuals against the autocratic ambitions of the emperors. As an outcome of this fight, after the death of Domitian it was again the senate that could appoint the new emperor, so the role and the respect of the senate was maintained within the framework of the principate. The senate implemented the principle of adoption in contrast to the dynastic plans of the emperors. In accord with other researchers on the same topic, I do not question Pliny the Elder's friendly feelings and loyalty towards the dynasty, but as an intelligent, independent person he also expressed his critical opinion, although he could only do it in an indirect, disguised way.

In my thesis I have tried to create a more complete picture of the trade between the Roman Empire and India based on the works of Pliny the Elder, other literary sources, and archaeological findings. On the basis of the *Natural History* I examined the author's opinion about the society of his age, about oriental trade, and I also tried to refine the image of his relationship to the Flavian dynasty. However, the research may not be complete as further investigations of the 37 books of the *Natural History* and additional archaeological findings may further enrich the picture.