

ROMAN TRADE ROUTES IN SOUTH INDIA: GEOGRAPHICAL AND TECHNICAL FACTORS (C. 1ST CENT. BC - 5TH CENT. AD)

JEAN DELOCHE*

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The Setusamudram Ship Canal Project is supposed to clear the passage for ships through Adams's Bridge, between the Indian peninsula and Sri Lanka. The coral reefs of this isthmus have been a hindrance to navigation. This is the reason why, since the beginning of history, the Palghat Gap in South India channelled traffic from the Arabian sea to the east coast, thus asserting itself as a major communication route, beckoning coastal maritime activities. This natural transpeninsular highway played a particularly important role in commerce during Roman times, from the first to the fourth century AD, because it was considered the best alternative to the long coastal route between the Malabar and Coromandel ports. The maritime route through the Mannar Strait, with its sandbanks and rocky islets, obliging vessels to perform a very tedious transhipment of merchandise, was used for Mediterranean trade from the fourth century onwards only.

Key words: Geographical factors, Roman trade routes

INTRODUCTION

It is known that the trade connections between the Mediterranean basin and the Indian Ocean region are very ancient, and that the nature, volume and intensity of the East-West contacts grew tremendously with the arrival of Rome into the eastern Mediterranean.

While reading the accounts of modern scholars regarding Roman trade in India, one is under the impression that there was a direct and relatively easy communication, at the beginning of the Christian era, between the

* Ecole française d'Extrême-Orient, 19, Dumas Street, Puducherry – 605001. Email : jeandeloche@gmail.com

Mediterranean world and the different harbours of the western and eastern Indian seaboard. Roman ships were regularly and freely plying the Red Sea and the two sides of the Indian Ocean. Roman merchants were established in the harbours on both coasts and finally that Arikamedu (the best known of the excavated sites) was a large port, much frequented by Roman ships (Rao, 1970, Pl. 12)¹

This opinion is rather simplistic and ought to be corrected, particularly with regard to South India.

Effectively, the first part of the voyage does not raise any question, though the assumption that the ships used in the Indian Ocean were Roman is a debatable issue.² In the days of the *Periplus*, vessels leaving Egypt for India sailed down the Red Sea, then through the gulf of Aden and across the Arabian sea. Beyond the Strait of Bab-el-mandeb the outbound route forked, with one track leading to the northwest coast of India (Barygaza) and the other to the southwest (Muziris) (Map 1).

However the second part, from the ports of the Arabian Sea to the Bay of Bengal, confronts us with problems demanding consideration. What were the ways through which Roman trade could be channelled ?

In fact, merchants had two options (*vide* Map 1): either to take the maritime route, around Sri Lanka or through the Mannar Strait, between the Indian peninsula and Sri Lanka or to follow the direct transversal land route across the easy Palghat gap towards the Kaveri valley.

I. GEOGRAPHICAL FACTORS

A. The Sea route: The Breaches in Adam's Bridge and the Mannar Strait

Regarding the sea route, most of the authors dealing with Roman trade are apparently not aware of the special physical conditions of this zone (in the southern tip of the peninsula and in Sri Lanka), especially of the navigation problems which sailors had to face to reach the East coast.

In the present day (an also during the European expansion in the East), in order to go from the Arabian Sea to the Bay of Bengal, the trade passes by a very long circuitous route round Sri Lanka, and a vessel sailing between Mumbai and Chennai performs a voyage of 5000 nautical miles, although the real distance by sea does not exceed 1500 miles.



Map 1. South India and Sri Lanka

However, until the end of the 19th century, indigenous coastal navigation did not made these detours, but used a shorter route through the Straits which separate the peninsula of India from the island of Sri Lanka. But the head of the Gulf of Mannar, affected by the winds of both monsoons, is difficult of access because of the sandbanks and rocky islets with which it is encumbered. Vessels setting their course northwards had to clear a passage across this kind of offshore bar strewn with coral reefs.

There were several channels (*vide* Map 2) but, during the Roman period, the main passage used by the ancient sailors was the Mannar channel (and not the Pamban waterway which did not exist).³ This passageway was neither a deep nor a wide expanse of water. Because of shallow depths, the vessels were obliged to transfer their cargoes to smaller craft at the entrance and then to take them on board again at the other side.⁴

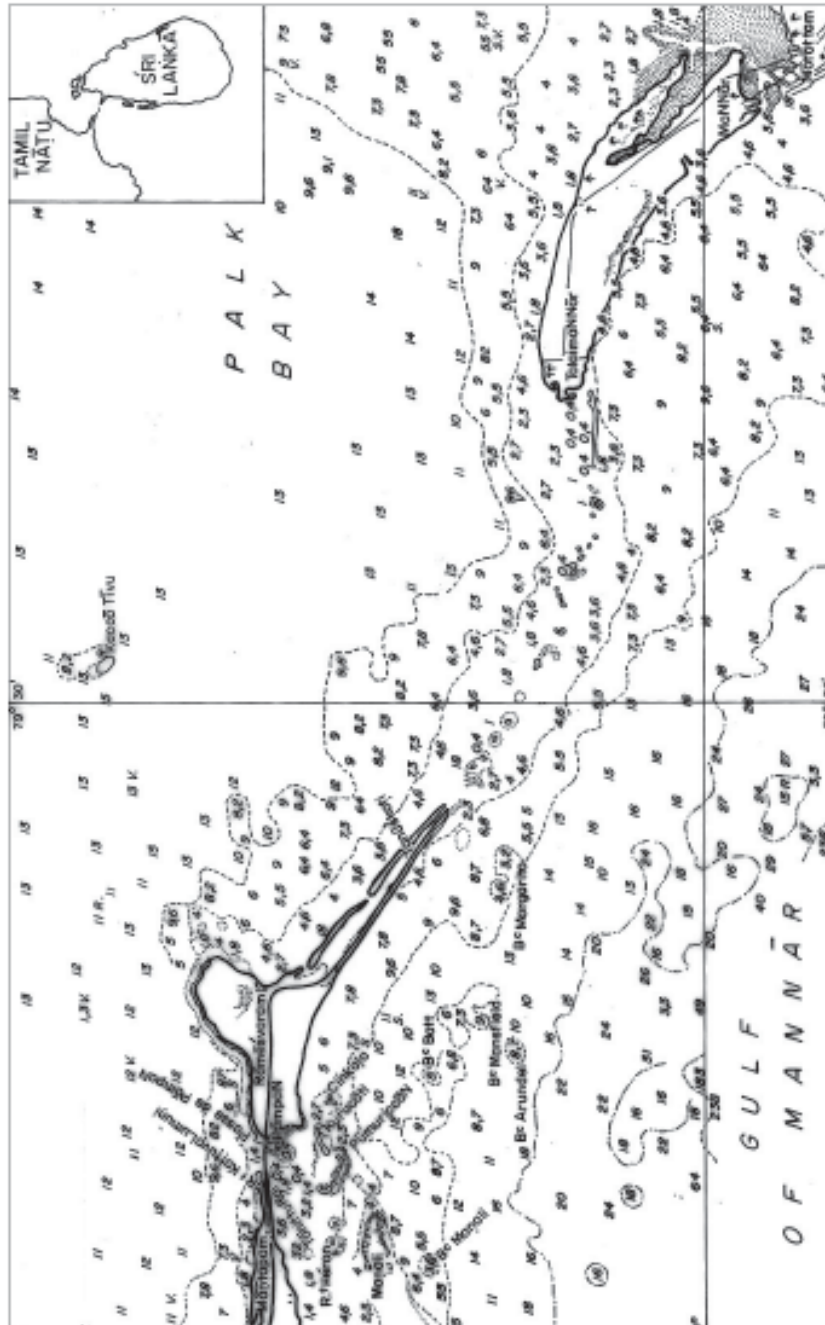
The Greek and Roman authors had heard of these difficulties. Pliny the Elder, in his description of Sri Lanka, says that “the sea between Taprobane and India is full of shallows and more than six paces in depth, but in some channels so deep that no anchors can find the bottom; for this reason, vessels are built with prows at each end to obviate the necessity of their turning about in channels of extreme narrowness” (Pliny, 82). It is clear that the ancient historian refers to the passageway mentioned above and to the boats of this region. The author of the *Periplus* adds that on the east coast “there are craft that follow the coast,... made out of very big dugout canoes held together by a yoke that are called *sangara*” (Periplus, 60) which were also native vessels.

The Mannar channel between Sri Lanka and India was thus a big hindrance to Roman navigation. If we add to it the shallow water-depth of the Palk Strait, exposed to the winds of the north-west monsoon and concealing dangerous shoals, and also the dangers of pirates and storms at sea, it is obvious that all these conditions could deprive merchants of their valuable cargoes and their lives.⁵ However, in spite of these difficulties, this channel was from time immemorial used by local sailors.

B. The Land route: The Palghat Gap, the Key to South India

On the West coast of India, the reliefs of the Ghats, with their wild ridges, elevated and wooded, offer almost no ways of communication, thus isolating the seaboard from the remainder of the peninsula, excepting those locations where the ridge-line slopes downward and is dissected by passes (*vide* Map 1).

The most important of them is the broad Palghat sill, situated between the two pillars of the Nilgiris and the Anaimalai hills, connecting the Ponnani valley, to the west, with the Coimbatore low plateau which slopes gently towards the Bay of Bengal, where three rivers (Bhavani, Amaravati and



Map 2. Adam's Bridge

Noyal) drain mature valleys into the Kaveri. With no obstacles to hinder communication, this brusque interruption of the chain allows of easy passage.

Moreover, on both sides of the gap, though the conditions were not fully adequate, natural water routes could be plied: on the one hand, the Ponnani river, encumbered by sand banks at its mouth, was however navigable during the rains over 100 km up to Palghat, on the other hand, the Kaveri, unable to accommodate any watercraft in Karnataka, was commonly taken by rafts (coracles) over its rocky channel, during the high water period, in the Tamil country, from Bhavani to the delta. These transports could have been of a relatively significant volume and their part should not be underestimated because they have always been considered the cheapest.⁶

There is the added fact that the littoral topography of the west coast is benefited by the existence of vast longitudinal lagoons sheltering, near their outlets, harbours able to accommodate seafaring vessels. And inland, the Coimbatore plateau, which has through the centuries conserved its individuality attested by the survival of its ancient name Kongu (and has been the meeting point of the three most stable Dravidian kingdoms), is a very prosperous country.

This is why this corridor has since the beginning of history channelled traffic from the Arabian sea to the eastern coast, thus asserting itself as a major communication route, beckoning coastal maritime activities.

From numismatic evidence, epigraphic documents and toponymic evidence, it is shown elsewhere (Deloche, 1991), the permanence of this axis of land traffic through the ages. Analysis on the ancient period is focused to examine in detail its role in Roman trade, taking into consideration archaeological evidence.

II. ROMAN TRADE ROUTES

The distribution of coins, glass and ceramics in the subcontinent and in Sri Lanka is analysed here within this physical framework and also within the network of urban centres in early historical India. Their location is obviously the result of commercial exchanges and therefore we can assume that there is a direct connection between archaeological finds and trade routes in South India.

Indeed, it is not a mere coincidence that the largest concentration of Roman coins in South India has been reported near the Palghat gap, and along the navigable Kaveri and that, elsewhere in the Deccan, their occurrence has been scanty. This statement of fact has a particular significance in the context of maritime and also inland trade routes.

A. Muziris, the Gate to the Cera and Cola kingdoms

Muziris, in the Cera kingdom, corresponding to *Muyirikkodu* noted on an inscription, was the *Primum Emporium Indiae* of the ancient authors. It has been identified with modern Kodungalur or Cranganor (though the exact location of the harbor and city is not known, because of heavy alluvial deposition). It was probably the capital of the Cera Kingdom, and one of the best harbours on the coast, behind the offshore bar where the lagoon opens, formed by the estuary of the Periyar River, and it appears also to have been one of Kerala's largest commercial centres, down to the 16th century.

Barygaza (modern Broach) was the international port for most of upper western India in the days of the *Periplus*, providing with raw glass, unloaded at its harbour. The cities of the Deccan, such as Paethana (modern Paithan) and Tagara (modern Ter); (*Periplus*, 60); Muziris, with Tyndis nearby (not identified), was very likely the best anchorage for ships from the West, played the same role in the southern part of the peninsula.

Although a number of issues regarding its role remain unanswered, one is however relatively well informed about its commercial contacts with the Cera and Cola Kingdoms.

Since the Palghat gap route was the shortest and the safest way towards the cities of the Kaveri valley and the East coast, imported items unloaded at this port could be transported overland.

Significant, as already said, is the fact that, abundant Roman coinage which has come to light, 80 % of these pieces of metal unearthed from the whole of India have been found in the Kongu country (Coimbatore plateau). Actually, more than two thousand Roman coins have been collected in this region, most of them ranging from the first century BC to the fourth century AD, principally from the reigns of Augustus and Tiberius (Wheeler 1946, pp. 116-121; Vaidyanathan 1983 pp. 234-237; Kandaswami, 1984, pp. 39-44, 1-19). Very likely they have been brought from the West coast by merchants



Map 3. Route links in Kongunddu of the beginning of the Christian era

or travellers who crossed the Palghat Gap en route to the rich valley of the Kaveri and, considering their geographical distribution, one can therefore suppose that they line up ancient main highways, describing on the plateau a broad fan-shaped figure (Deloche 1991, pp. 53-54, fig. II) (*vide* Map 3).

A part of the raw glass imported to Muziris followed the same route and reached the urban centers of the Cola Kingdom, where large quantities of raw glass have been found in excavations (particularly in Arikamedu) (Stern 1991, pp. 116-117). Ceramics such as *terra sigillata* found at Arikamedu, now datable to the early first century AD, have also been recovered at Kodumanal, Karur and Sullur in the Kaveri valley (Raman 1991, p. 103).

Recently, sherds of rouletted ware were unearthed at Vellalur, near Coimbatore, also known for a Roman coin hoard (Rajan 1996, p.103), and a large number of rouletted pottery fragments has been found at Uraiur, on

the Kaveri, which was the capital of Colanadu (Raman 1991, p. 130). The amphoras found at Arikamedu, Kanchipuram, Vavasamudram (near Mamallapuram) and Karaikadu (8 km to the south of Cuddalore) appear to be local imitations of imported Roman amphoras, manufactured in the beginning of the first century AD. These four places on the eastern littoral are definitely known to have received import from the Mediterranean world (Raman 1991, pp.125-130), and, very likely, through the Palghat gap and the Kaveri valley.

Finally, the famous beryl, mentioned in the *Periplus* as one of the major exports to the Mediterranean world, was obviously coming from the Coimbatore plateau through the same gap (Rajan 1996, p. 103).⁷

Thus, it appears that the natural transpeninsular highway must have been considered the best alternative to the long coastwise route between the Malabar and Coromandel ports, mainly from the first century BC to the late second century, at a time when Roman trade was at its zenith, and also later.

B. The role of Mantai and the Mannar Strait

The third century was, for the Roman empire, a period of great political instability which was not favourable to long-distance maritime trade; but there was a revival of this commerce after the 4th century AD. It was no longer exclusively in the hands of Roman subjects but controlled by Levantine and South Arab middlemen, until it came to a complete halt with the Muslim Arab occupation in 640 AD (Sidebotham 1991, pp. 34-35).

Thereafter a change occurred. The discoveries of Roman coins dating from the end of the second century on the Andhra coast from the fourth and fifth century in the southern portion of the Tamil Country and in Sri Lanka, tend to show that the commercial contacts between the Mediterranean basin and the Indian Ocean were made more regularly, at that time, through the ports of Sri Lanka and of the east coast of India (Mac Dowal, 1990).

Obviously there is a correspondence between the large quantities of Roman coins found in Sri Lanka and the rise in eastern trade in the 4th and 5th centuries AD with this island. The abundance of coins is apparently the result of the gradual shift of the focus of trade from the Malabar coast towards Sri Lanka, which, by the 5th century, had become the main centre of trade in the Indian Ocean (Bopearachchi, 1996, p. 67).

As the passage through the Mannar Straits was very difficult, it is evident that, because of its strategic significance, Mantai, situated at the northwest tip of Sri Lanka, at the southern extremity of Adam's Bridge, must have been a major settlement. In fact, from literary sources we know that Mantai, today a village on a silted lagoon, has been, under the name of *Mahattittha* or *Matottam*, one of the most important ports of Sri Lanka for transshipment of merchandise between the Gulf of Mannar and Palk Strait until about the 11th century.⁸ Limited or exploratory excavations have been conducted at that place, but it is certainly "one of the most significant sites for potential evidence of Roman trade" (Carswell, 1991, pp.197-203, Boparachchi, 1996, p. 67). Future works may show how the site participated in direct trade with the Roman world, but one already know that the channel on which it is placed was regularly used by native craft, despite the dangers this crossing entailed, even in the 19th century.

East Coast and Bay of Bengal

Now, one could ask how, within such a frame, Mediterranean contacts with areas along the eastern coast of India, especially the estuarine regions of West Bengal, can be explained. Classical accounts such as *The Periplus of the Erythraean Sea* and Ptolemy's *Geography* give us the impression of brisk trading activities along this part of India, but (Sengupta, 1996, pp. 115-127), they do not make any direct reference to the contact between the Roman empire and the ports in the Bay of Bengal, nor has the Bengal coast yielded a single Roman coin. Therefore the rouletted ware, amphora and amphora-like objects found in this region "should be viewed in terms of contact with the southern part of the eastern seaboard" where there is occurrence of rouletted ware. It is very probable that all these coastal establishments were connected with the Coromandel coast by maritime routes, as land communication was particularly difficult in these litoral plains and through the great deltas with their innumerable distributaries menaced by floods (Deloche, 1994, vol. II, pp. 7, 66, 106) (once more an example of the importance of geographical factors !) Anyway, whether Roman commodities were imported through the Palghat gap or across the Mannar Straits, it is obvious that they were carried by native craft along the eastern coast.

CONCLUSION

It is thus seen that the wide Palghat Gap, because of the special facilities it offered to land transit, was extensively used for Roman trade until the fourth century AD and played a vital role in contacts between the Arabian sea and the Eastern littoral.

It is also brought to the fore the role of the narrow Strait of Mannar, dangerous to navigation, which, from the third or fourth century AD onwards, channelled a great part of Mediterranean trade from the Malabar ports to the East-coast centres and was a *passage obligé* for the native craft which carried local traffic.

What could have been the reasons for this change ?

- One of them, as already said, was the shifting of trade centres from the Kerala coast to Sri Lanka.

- But, geographical and technical factors must have played a very big part in this process and should be considered for a comprehensive explanation.

This is why Roman traders, or their agents, being aware of the serious hindrance to navigation and transport in the Gulf of Mannar, probably relied more on the convenient land route and did not take the risk of transfer of cargoes to smaller craft in the breaches in Adam's Bridge. When, at a later period, their trade was controlled by local middlemen, who had technical expertise in transshipment of merchandize, the maritime route was adopted.

Still, it is almost certain that the Palghat route remained the main axis of traffic from the West to the East coast. Considering the hard conditions of sea transport at the beginning of the Christian era, it is evident that commodities unloaded at the Kerala ports and intended for, let us say, Arikamedu, would be transported via the shortest, the easiest and the safest route, the Palghat axis.

In this analysis, deliberately stress have been put on geographical and technical factors, because, in most recent works on the subject, these basic elements are not taken into account. As a result the role of the great Palghat sill has not been given enough prominence and the part played by the Mannar Straits has remained unrecognised.

NOTES

1. The brick walls found by archaeologists near the river of Ariyankupam and described as vestiges of an entrepot, are considered as a dock.
2. L. Casson uses the *Periplus* as the focal point for examining sea routes from Rome to India and ancient naval technology. He assumes that the ships sailing down the Red Sea and across the Arabian Sea were Graeco-Roman vessels. He observes that their sailing patterns were different from those of the Arabs and demonstrates that their ships were larger and stronger than those of the Arabs and could better withstand the onslaught of strong monsoon winds than those of the Arabs. According to him, they were built like the very heavy vessels that plied between Alexandria and Rome, carrying Egyptian grain. I am not, however, convinced by his demonstration concerning the type of ship plying in the Indian Ocean, which is not substantiated by any written evidence nor by archaeological or iconographical evidence. First, was there any need of such large vessels in the Indian Ocean, since Indian goods were not bulky and cheap, but compact and costly merchandise ? Second, in which place were they constructed ? They could not have been built on the Mediterranean coast; otherwise their various components would have had to be dismantled and carried to the shores of the Red Sea. If they were constructed in the northern ports of the Red Sea (by whom and with what kind of timber ?), then they could have had different features, more suited to the monsoon winds. Lastly, to say that Arab vessels were inferior sailing ships is not justified; in fact their nautical qualities were beyond contention (*vide* the note by Admiral Paris 1841, on the Indian coasts, pp. 1-44, pls. 1-40). The question remains open.
3. It is said that the breach in the isthmus was the result of a violent storm followed by an earthquake in 1480 (Manual, 1893, p. 666).
4. During both monsoons rather a high surf breaks on the sides of the channel. The passage has always been confined to small vessels, and we know that in 1834 the vessels coming from the north unshipped cargo till their draught of water was reduced to 4 or 5 feet and then warped through the channel. After passing the strait, they anchored a second time and reshipped cargo till they drew about 6 feet; then they had to cross a sandbank and anchor for the third time and reship the remainder of the cargo and then continue their voyage. These operations usually occupied 3 or 4 days, even under the most favourable circumstances, and when several vessels arrived together, the last were occasionally detained for a very considerable period, for they could only pass when the weather was moderate, and the last arrivals were obliged to wait 10 or 12 days longer for an interval of fine weather.
5. Even in 1898, people made the journey from Bhavani to Erode in large coracles and, at the beginning of this century, Kumbakonam students crossed the river in wicker coracles large enough to contain 20 persons (Hornell, 1976, p. 94). Around 1825, 50 coracles were counted at Tiruchchirappalli; at flood times they descended the different river arms, each carrying about 4 tons of rice, (Deloche, 1994, p. 139).

6. For the Roman Period, apart from the information given by the *Periplus*, the *Tabula Peutingeriana* records a temple of Augustus in the city. (Deloche, 1994, pp. 89-90), and also the excellent notes given by Stern (Stem, 1991, pp. 116-117, fig. 6.6, and particularly notes 25 to 30).
7. “Beads of beryl unearthed from Kodumanal are significant in this connection... Even today beryl stones are collected on the surface by local people in and around Padiyur”.
8. Vide the presentation of the site (mentioning the sources), in Deloche (Deloche, 1985, pp. 168-171).

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