COMMODITIES
COMMODITIES

Ancient trade helps in transportation of commodities from one place to another that from region to region. Agricultural commodities, forest products, sea products, handicraft goods were sold as commodities. In ancient world, cow used as commodity as well as exchange commodity. There are enough sources in Sangam literature, great epics, sanstrict literature, foreign notices, excavation reports, inscriptions, for analysing commodity. The ancient commodities were such as agil elephant horn, sandalwood, pepper, sugar, salt, paddy, ginger, milk, better milk, cotton, shell bangel, pearl, beads, diamond, gold, silver, bronze, silk, gold ornaments, lamp, mirror articles, potteries, gold coins etc. were used.

In Tamilnadu there were three types of commodities viz., food products, clothes and ornaments, foreign goods. In this food products sold as internal and external commodity clothes and ornaments were sold only in local trade centres and also in foreign trade centres. Foreign goods were used by few, who were rich.

Paddy:

River beds were taken for paddy cultivation. Different paddy varieties were used in ancient time. Among the five regions, Marutham
enjoyed richness. Sali paddy was said to be one of the high quality paddy\textsuperscript{1}. Rice was considered as the food of the rich people in ancient India.

Rice was exported to foreign countries. Greeks had called rice as 'orija'\textsuperscript{2}. This name may be borrowed from Tamil word. This shows that there is a possibility of export rice to Greek. It was exported from Musiri and Thondi ports. The evidence shows that paddy cultivation started at the early 5000 B.C. onwards in Tamilnadu\textsuperscript{3}.

Tamil Brahmi inscription speaks about the gift given in the form of paddy. Adithanallur, Sanur and Kodumal yield paddy husk. In Srilanka, paddy cultivation carried out and also exported\textsuperscript{4}. For this they used Tamil ports such as Musiri, Thondi and Nelkinda\textsuperscript{5}.

**Jaggery:**

In sangam period sugar was produced from the raw material sugarcane which was cultivated in and around Tamilnadu. Adiyaman had introduced sugarcane cultivation\textsuperscript{6}. But it might have been taken of Adiyaman.

Perumbhanarru padai, Malai padukadam and Pattinappalai say about the method, used by those people who extracted sugar from sugarcane. Alagarmalai inscription speaks about the sugar trader\textsuperscript{7}. 82
Sandal (Aram):

Ancient people called sandal as 'Aram' in Tamil. Sangam literature says this as 'Santhu' they also cultivated sandal. Patinapalai says that sandel was too much in western ghats. Silapathigaram denotes the export of sandel and also the imports of sandel from eastern countries. Only few poems refer sandel as commodity.

Agil:

It is a perfume tree. It can be seen in the pepper cultivation areas, in western ghats. Perunagathai says about Agil. This was exported to western and eastern countries through pumpuhar.

Teak:

Sangam literature speaks about teak. We can see this in hilly region. Agananuru says about thekkamal means teak grove. At western ghats teak was cultivated. In Egypt palace construction, it was used. Romans imported teak from India. Pumpuhar excavation yields teakwood.

Pepper:

Sangam poets called pepper as miriyal, kari. Sangam literature says about its cultivation at western ghats. Pepper played a
very important role in food, and also it had its medical value. Preumbanarrupadai says about peppers medical value.

Pepper was exported to local regions like Pandiya country, Kongu country, Vadugar Country, north India and also to foreign like Rome, Egypt, Greek, etc. For Southeastern countries and China, pepper was exported through Puhar. Agananuru and Purananuru say about pepper export. Pepper occupies a peculiar position in the history of food. 'As dear as pepper' was a common saying. Foreign geographers such as Pliny, and Ptolamy say about yavana import of pepper from Tamilnadu.

Among spices in terms of quantity pepper ranked the highest especially to the Roamn empire. Pepper perhaps made up three fourths of the total bulk of the average Rome bound cargo ot more than half. The periplus says that the ships which visited the western (Malabar) ports in the first century A.D. were of a large size, on account of the pepper that was being carried. Common black pepper was exported from kutta nadu (cottonara the region around Quilon and Kottayam) where the climate was most conducive to its growth.

The Pattinappalai refers to sacks of black pepper reaching the Cola port of Kaverippumpattinam by carts, presumibly by the
circumpeninsular route from the west coast. The references to pepper or other spices going to north India are few, but evidence of its entering the internal exchange system in Tamilakam is available. The 60 Cholas and Pandyas would have attempted to control the west coast, the only region where pepper was available and hence the Cheras having a virtual monopoly over it. The ports of Muciri and Nelcynda (Kottayam) owed much of their prosperity to the pepper trade and became prominent commercial centres. It is possible that Tondi was also involved in a small way in this trade through the Ponnani river, whose tributaries would have brought down the pepper from the Malabar hills.

Elephant horn:

In Tamilnadu forest elephant horns yield much income. Elephant horns were considered as prestigious gift which was given by forest people to their king chief. Purananuru says that the king received sandel, elephant horn deer etc as tribute from forest people.

Elephant horn was a exchange commodity for forest dwellers. They dont know the value of the horn. They exchanged horn for toddy. Sangam poems refer to about the exchange of horn for toddy by hunters and forest dwellers.
The northern boundary of Tamilnadu was Venkat hills in which there were full of elephants. The tribal people known as Kalvar made horn as trade commodity. These people exchanged horn for toddy, and paddy. Patirrupattu mentions 'Umparkadu' means as elephant forest. Modern Anamalai is identified as Umparkadu. In Kongu and Chera country we can see plenty of elephants.

Elephant horn were exported to vedugar country, north India and yavana country. Silapathigaram refers to the articles which were made by horn. Deccan excavation yields decorative dolls and horn combs.

Elephant horn was exported to foreign countries also, which was attested by foreign writers. The excavation at 'pompil' which was a Roman city, yields goddess Lakshmi which was engraved in elephant horn. It belongs to 2nd century A.D.

Pearl:

Korkai yield too much of pearl. Eventhough other river beds of Tamilnadu yield pearls, but pearl of Korkai more valuable than others. It had world fame. It was exported to Egypt, Rome, Greek and other western countries.
Sangam literature speaks in large about Korkai pearl. Agananurn, Purananuru say about Pandia and pearl. At Korkai fisherfolk took pearl along with fish in the sea. They changed peral for toddy.

At Panthar pearls were famous. Madurai also famous for its pearls. Silapathigaram says about varities of pearl. In sangam age pearls were used. But in Silapathigaram pearl were differenciated according to its quality.

Ramayana also says about peral. In Chera country Musiri also yields pearl. Arthasasthra called it as Sowirnayam. Egypt queen used Pandian country pearl. Kalinga inscription says that the ruler Karavela had received tribute from Pandian in the form of pearl. At Andhra excavations from Pattipurolu Buddha vihara yields Pandian pearl.

Amphorae Finds:

The amphorae is a large cone shaped, double handled Mediterranean wine jar, buff in coulur and made of well levigated clay.

Amphorae began to reach to the Arikamedu from the first century B.C. At least two sherds from the site have been indentified
as fragments of Graeco-Italic jars of the second century B.C. Some of the amphorae fragments from Alagankulam also seem to have been recovered from a layer of the pre-Christian era\textsuperscript{36}. In all those amphorae sites which have also yielded the rouletted ware (e.g. Alagankulam, Karaikadu, Karur, Nattamedu, Arikamedu) the former ware occurs half a century or more after the latter. The rouletted ware had a very long time span in India (300 B.C to 400 A.D), whereas the amphorae was in use in a few sites of the country for the maximum of three hundred years (100 B.C to 200 A.D) though sherds from layers of a very late date (3rd, 4th century A.D) have recently been reported to Alagankulam\textsuperscript{37}.

Almost all the amphorae sites were early historical urban centres of considerable commercial and political and religious importance. Hence all these centres had a prosperous 'elite' class of people who were the regular consumers of the wine. Even in the Tamil Sangam works there is a clear indication that the Roman wine, known for its high quality and fragrance, was meant mainly for the kings and nobles alone and not for the common masses who could afford only the local varieties. The Periplus categorically states that wine was one of the chief items of import into the port of Barugaza\textsuperscript{38}.

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Recent studies on the amphorae finds in India have, however, definitely indicated that the amphorae was used to contain, besides wine, a variety of other substances such as foodstuffs, olive oil and medicines. In Arikamedu alone for example, there are several fragments of olive-oil jars from the northern Adriatic area and a few sherds of the Spanish amphora for garum (a Spanish fish sauce), though the bulk of the amphorae pieces are campanian wine jars of the first century B.C. and first century A.D.

The find a amphorae pieces in any site, does not necessarily indicate trade in wine. The amphorae in the Buddhist sites of northern and western India may indicate a demand in the Buddhist establishments for items like olive oil (which was certainly an item of Roman export to India) rather than wine. The finds of garum jars in Arikamedu clearly suggests that there was a Roman settlement at the site since garum was a prized item in the diet of the early Romans and the sauce was certainly not of interest to the Indians. In any case, there is no evidence to show that garum was an item of trade between the Romans and the Indians. The foodstuffs may have been brought by the Romans for their own consumption not only with in India.

Cônical jars erroneously termed as 'amphorae' or 'imitation amphorae' have been recovered at Kanchi Vasavasamudram, Karaikadu.
and Arikamedu. Unlike the genuine amphorae, these handle less jars are of very coarse fabric and are mostly dull red in colour.

**African Red ware:**

Alagankulam yielded unique type of pottery with lustrous red surface made from well levigated clay, with a generally thin cross-section. The ware has been identified as of the late African red slipped variety and its probably place of origin was in Tunisia. Few sherds of this ware have been reported from Arikamedu. These belong to 100-110 A.D. 42.

**Matel Artefacts:**

The bronze statue from Brahmagiri and bronze jug belong to early Greeks at Avinasi 43, very much within the Roman coin yielding region of Coimbatore.

An unpublished find from Udhagamadalam is a small bronze (or brass) figure probably of a Roman priest, seated on a throne. The priest is clad in pleated drapery and holds a thunderhold in his left hand. The sculpture is fixed on a pedestal which bears a legend reading ROMAE 44.
Glass Objects:

Few glass objects of Roman origin have been reported from Arikamedu. The most important find from Arikamedu is the fragment of a rimmed bowl of whitish iridescent glass. Bowls of this type originated apparently in Italy and spread throughout the Roman world from the first century B.C. to the end of the first century A.D. All the Roman glass items at Arikamedu are of the first century A.D. except a single specimen which was recovered from a pre-Arretine layer (late first century B.C.). The bowls may have been used by the Romans residents at the site.

Clay or terracotta objects:

Arikamedu has yielded at least three fragments of the Roman lamp. Two of these lamps are almost intact. Both of them are circular in shape, are having four nozzles and the other twelve. The latter also exhibits the omphalus (known in the centre). Human figurines in terracotta recovered from Arikamedu are undoubtedly imitations of the Graco-Roman specimens.

Jewellery:

Arikamedu has yielded in numberable beads and gems, some of them believed to be of Roman origin. One of the gems is reported to
AMULET - VELLALUR
bears the head of Augustus in intaglio while the other, a quartz intaglio, represents Cupid and the eagle. The aurei hoard from Vellalur also contained many gold jewellery items which included four very important finger rings, two of them locally made and two imported. One of the India rings portrays a lion with lifted paw, while the other exhibits a fish. Among the imported rings. One represents a lady dressing her hair and the other a dragon and the head of a Graeco-Roman soldier with elaborately headgear.

The Roman coin hoard from Karivalamvandanallur also included a few gold jewels, on one side the head of Ptolemy of Egypt and on the other a jar and cornucopia with a badly-mutilated legend on the periphery. Though the jewel exhibits non-Indian motifs, it is believed to have been made in India.

Of all the minor antiquities, the finds of Graeco-Roman jewellery in Tamilnadu are the most interesting. Graeco-Roman artists seem to have worked along with local ones in the Tamil country. This could be the chief reason for many of the ancient jewellery often found in association with Roman coins, displaying a synthesis of Mediterranean and Indian motifs.
MUTANA - KARUR.
There is every possibility that sizeable quantities of Roman gold jewellery reached the early Tamil country by means of trade and were lost or melted during the medieval period.

**Gold Signet Ring from Karur:**

A remarkable signet ring in gold was found on the river bed of Amaravati in Karur. The amorous couple portrayed on the face of the ring is truly one of the finest expressions of Indian art. The absolutely perfect proportions of the figure, the concept of symmetry as delineated in the legs, face and body, the followings limbs, the composition and use of space the remarkably agreeable contours, mark this as one of the most outstanding pieces of Indian art.

Two other rings of great significance have been recovered from the same river bed in Karur in recent times - One is a gold ring with a legend in Tamil - Brahmi reading upa (s) an ie, a lay devotee and the second a silver ring also with a legend in Tamil Brahmi characters reading Tittan. The former suggests that it belonged to a merchant who was, judging from the contemporary records, a lay disciple of a Jain monk.
Roman Coins:

Roman Coins found in Tamilnadu range in date from the Second-first century B.C to the fifth century A.D. Early Roman coins abound in Tamilnadu. The majority of the finds occur as hoards, usually in earthware pots. Kottayam (in Kerala) is the only hoard, probably in the whole of the India, which was not found within a mud pot; this find is one of the largest Roman hoards in India and most of the issues are supposed to have been simply buried in the soil; it has also been reported that some of the coins of the hoard were found in bags which have been destroyed, while a few issues were found inside a brass vessel.

Chavadiapalayam and Sulur near Coimbatore have revealed Roman issues within Megalithic monuments (Pandkulis). While some of the Roman finds from North-West India (Ahin-Posh, Kabul valley and Manikyla) were part of ritualistic deposits within Buddhist Stupas, the use of Roman coins below the foundations of an old Hindu temple at Nellore and maybe at Saidapet (Madras) are the only known exceptions.

Pre-Augustan Roman coins have been reported from over ten Indian sites, spread throughout the sub-continent. The finds from
KEY TO MAP

1. Alamporai (Alampara)
2. Akhilandapuram
3. Annamalai
4. Alagankulam
5. Bishopspdown
   (Udhagamandalam)
6. Budinatham
7. Chavadipalayam
8. Coimbatore District
   (find spot not known)
9. Coimbatore District
   (find spot not known)
10. Coimbatore District
    (find spot not known)
11. Cuddalore
12. Dharapuram
13. Kalikanayakanpalaiyam
14. Kaliyampattur
15. Kallakinar
16. Kongayam (Kongeyam)
17. Karivalamvandanallur
18. Karur
19. Kathanganni
20. Kilakarai
21. Kodumanal
22. Koneripatti
23. Korkai
24. Kulathurpalaiyam
   (Kulattuppalaiyam)
25. Madurai
26. Mahabalipuram
27. Malayadipudur
28. Mambalam
29. Pennar
30. Perur
31. Pollachi
32. Pudukkotai
   (Karukkakkuruchi)
33. Saidapet (Madras city)
34. Sulur
35. Thanjavur
36. Tiruchirapalli
37. Tirukkoilur
38. Tirumangalam
39. Tirunelveli
40. Tiruppur
41. Tondamanathan
42. Udumalpet
43. Vellaiyaniruppu
   (Kaveripumpattinam)
44. Vellalur
45. Vellanthavalam
Kallakinar and Tiruppur (Tamilnadu), Eyyal (Kerala) and the Laccadives (Lakshadvip islands) are the known specimens from South India.

The Palghat pass stretches through the ranges of hills running from the Nilgiris in the North through Anaimalai and Karadomom hills in the south. The pass play a very important role in ancient trade because it was the sole route from the Kerala coast into Central southern India specially in the early first century A.D, when the circumnavigation of Capecomorin was considered too hazardous. It may be noted that first century Roman finds are more in Western and South western India and most of finds of this period on the Coramendal coast are believed to have come from the Malabhar region through the pass. The highly prized beryl (aquamarine), was then believed to be found only in India. The major mine was at Pattali (padiyur) in Periyar district and a smaller one at Vaniyambadi in North Arcot district, the precious stone was in great demand in the Roman world during the first century A.D. Added to this was the demand in the west for semi-precious stones like crystals found in places such as Kodumanal.

**Imitation Coins:**

Imitation of Roman coins have been reported from many sites in Central, Western and Southern India. The maximum number of finds
comes from Andhra. In Tamilnadu such specimens have been discovered mainly at Malayadipudur and Madurai.

Slash marks on Roman Coins:

One of the most important and peculiar characteristics of the Roman coin finds in India is the occurrence of the slash marks on some of the coins. Such marks have not been seen on any Roman coin found outside India, including those recovered from Central Asia and Africa. The slash-marks, usually 1-2 mm in length, have been effected by a chisel or a knife. The marks have been mostly found on the obverse of the coins, that too over the head of the Roman Emperor represented on the coins. Almost all of the slashed coins are 1st century issue. Majority of the coins were slashed during the first century A.D or in the beginning of the 2nd century A.D.

The majority of the Roman coins found in Tamilnadu and Kerala exhibit princes, queens or deities. It is interesting to note that although a large number of Roman ships came to India for trade, no Roman issue representing a ship has been reported from South India so far, although ship are found on Roman coins were in circulation with in Europe.
Rouletted Ware:

This refers to a pottery type which bears rouletted decoration, shades of grey and black are very common. The ware occurs both in the course of archaeological excavations and also on the surface. The ware is very common throughout the coramendal coast from West Bengal to Kanyakumari and also in Sri Lanka. As far as Tamilnadu is concerned, the rouletted ware sites are fewer in number than the Roman coin sites. This implies that the imported pottery, or at least the rouletting technique travelled to the remotest nooks of India during the early historical period.

Some sites which have not revealed a single Roman coin have brought to light hundreds of rouletted sherds, many of these sites were mentioned neither in the Tamil sangam nor in the classical accounts and have never been regarded as ancient trade centres.

The Romans travelled in India from the coast to the interior through rivers in canoes, hence most of the Roman antiquities including coins are found in sites located on the banks of the major rivers. In the case of the rouletted pottery, all the sites yielding the ware are situated either on the coast or on the banks of the river.
IRON FURNACE
Manigramam and few sites in Andhra. The manufacture of local copies was done only in the south because the rouletted ware was extensively used only in this part of India and the imitations were meant to fill up any short fall in the supply of the original wares from Rome.

IRON :

The excavated iron objects from various places clearly indicates, that iron must be the indigenous material and the subjugating power of the iron smelting intrudors, exercised over the pre existing Neolithic pastoral cum agriculturists and the protecting power of the pastoral cum agriculturists whi got transformed into iron using people. The Periplus states that from the inland regions of Ariake, India iron and steel was imported by the west. Contrary to the view that the source of the iron should be sought either in China or in the Cherakingdom.

In Chennimalai, just 20 k.m away, from Kodumanal had high quality magnetic ore and the surrounding areas had all the fuel needed to melt them. The Kodumanal craftman melted the ore and made iron. Enough proof has been obtained of the existence of quite a few iron workshops in the area. A large quantity of slag was found heaped on one side of the work spot, about 60cm. below the surface. A number of earthen pipes to blow air over the fire and spot where the crucibles were kept have been found burial under the floor of the workshop. Most
The rouletted finds from Arikamedu were assigned to the first century to second century A.D. The rouletted technique was probably introduced at Arikamedu from the west\textsuperscript{57}. Sometimes in the second century B.C. Some of the Roman traders reached Arikamedu from the Malabar coast through the Palghat pass. The limited information on the east coast of India in the periplus could also be attributed to this. But the use of the port of Arikamedu for direct sea trade with the Romans, at least from the first century A.D onwards, is undoubtedly unquestionable. The site of Alagankulam has also brought to light rouletted pottery in layers of the pre-Christian era. One red rouletted sherd found on the surface of this site, bore a six-lettered Tamil-Brahmi legend reading Ti-Ca-an-palaeographically assigned to the second first century B.C\textsuperscript{58}.

Black and red ware is the chief type of pottery found in association with the rouletted sherds throughout India. The rouletted ceramics occur along with the russet coated painted ware in Kanchi, Uraiyyur, Arikamedu, several Andhra-Karnataka sites, Kodumanal and Karur\textsuperscript{59}.

Rouletted ware has occurred along with the northern black polished ware at Alagankulam\textsuperscript{60}. Rouletted ware of local origin has been reported from Kanchi, Karur, Kodumanal, Korkai, Vanagiri,
probably the craftsmen used bellows to blow air.

The number of iron implements and tools and the large quantity of slag and other indications of steel manufacture in Kodumanal, may solve the mystery of the source of iron and steel supply in the Mediterranean region at that time. Archaeologists of various countries have down the source with a convex surface. These may be spindles used for spinning cotton. The iron beads also found. These beads were actually made by moulding process.

The Alagarai excavation yielded, shapes like knives, daggers, arrow heads etc. Since most of them were obtained in pieces, their exact shapes could not be determined.

A large number of iron objects were unearthed in Tirukkampuliyur, but most of them were found in a bad state of preservation. The selected iron objects identified were as follows: chiser head, Tanged arrow head, nail of round section with know head, spike of tenticular section tapering towards one end, hook with a sharepended end, Garbed arrow head, arrow head, a ring, Larhar's knife, a cylindrical rod with a thick bulging portion in the middle. Broken part of a nut-cracker and a thin knife blade with a pointed end and share edges.

High quality of ore was found in Idayapalayam. The site
CARNELIAN BEADS - KOBUMANAL.
gives an idea that there should be an industry prevailed then. More details are expected in the future excavations.

**Beads:**

The semi-precious stone include carnelian agate, jasper) and rock crystal and amethyst Garnet is yet another semi-precious material out of which beads were made in ancient India. Finally soap stone with its smooth surface and soapy feel. Which is an ideal material for beads had also been found in Tirukkampuliyur. Apart from these specimens, well shaped but unfinished stone heads and tiny rock crystals were also collected, which were doubtless intended for the bead making industry in Kodumanal and Tirukkampuliyur. The occurrence of tiny quartz crystals and unfinished stone beads and pieces indicate that they were being manufactured locally by the people of that times.

**CARNELIAN:**

Kodumanal megalith yielded the highest number of carnelian beads nearly 8000. These beads were considered by those megalithic people as very precious and that is why they were put as offerings to the departed. The colour of carnelian stone ranges from pale yellow to pink. Most of the beads are etched with white colour designs. There
were four groups of beads. They were 1. disc. circular, 2. barrel 3. cylindrical and 4. oblate.

The raw material was not available locally. The nearest source, for that must be either Srilanka or Gujarat. A good quantity of carnelian chips was obtained. But no half finished bead or some such evidence was found to consider the place definitely as a factory site. This doubt has to be cleared by future work.

SOAP STONE:

Eighteen soapstone beads were found in Tirukkampuliyur all of them range in colour from brownish grey to greyish green. Most of them are barrel in shape and others spherical, cubical or rectangular. Alagarai also yielded these semiprecious beads.

QUARTZ BEAD:

Kodumanal was definitely a factory site for quartz objects. The broken pieces of rock crystal occurred there. A workshop as such could not yet be located due to the limited nature of the digging. Quite a variety of quartz objects have been noticed, finished as well as semi finished beads, roughly shaped balls, cylindrical discs, rings, truncated cones, blades etc. All these were from habitation site. Many roughly
shaped balls or various sizes may have been meant for making balls or beads.

Tirukkampuliyur sixteen quartz beads of which three were broken and two well shaped, without hole for stringing were found 68. There are six small rock crystals (Quartz) with their well developed natural geometrical faces. Apparently these tiny crystals might have been collected for converting them into beads of convenient shapes. There is also one green coloured bead hexagonal in shape. Most of the quartz are barrel shaped, a few of them are cubical, circular or spherical.

AMETHYST:

Amethyst was also used often for making beads and rings. Among other precious stone sapphire has some beads. Garnet has some fine beads opal and jesper, have each on bead. Four beads in lapis lazuli. All these were from Kodumanal habitation site 69.

There are five amythest beads ranging in colour from purple to light violet was find in Tirukkampuliyr 70. Most of them are barrel shaped. One of these beads is beautifully ribbed or fluted in shape. Carnelian has been used for five beads. All of them are barrel in form and the colour is uniformly orange. Red carnelian is nothing but red chalcedony. Besides four garnet beads, two barrel shaped beads of
banded agate, one banded jasper bead and a few agate beads have been unearthed from this site.

STEATITE BEADS:

A few steatite beads of interesting shapes have been found in Tirukkampuliyur. Three beads are very long, measuring about 2cm in length and 1 cm in diameter. These are also collared varieties.

PASTE BEAD:

A large number of paste beads were collected far from Alagarai and Tirukkampuliyur. The common shapes in them are spherical circular, barrel and tubular. Among beads small and very tiny disc like beads which form a unique variety by themselves deserve mention. These tiny forms show the minute workmanship and skill involved in the bead-making industry of the region. This show affinity in workmanship and parallel development of the bead making industry in the two different sites.

SHELL OBJECTS: SHELL BANGLES:

Shell was a popular material for making bangles and to some extent beads. Comparing with Kodumanal a large number of bangle pieces of shell were collected from Alagarai and Thirukkampuliyur.
These are helpful to corroborate the evidence found in the Sangam classics regarding the use and popularity of these shell objects in those times. They were of two varieties, the plain and decorated ones. The decorations seem to have been effected by incisions made by a sharp instrument of the exterior surface only. The ornamented designs on pieces consisted of straight liners arranged to form simple geometric patterns especially to form the criss-cross designs. In some of the pieces, there is a broad groove in the centre and it is suggested it was fitted with a gold leaf as a decoration and ornament. It is equally interesting to note that some of the pieces were painted with red ochre paint, traces of which were found on some of the specimens.

**SHELL BEADS:**

A good number of shell beads were found in Alagarai, Thirukkampuliyur and Kodumanal. Among shell beads in Kodumanal two are big disc. Cylindrical ones are long cylindrical bead and the rest are thin disc circular beads. These latter ones were about 7.5 cm in diameter and 1 mm thickness. The Tirukkampuliyur beads which are generally either corn shaped or barrel shaped and were occurring in a lightly decomposed state. The beads include a variety of shapes in
different sizes, their sizes show a diameter ranging from about 2mm to 4mm.

**GLASS BEADS:**

Of glass objects bangles and beads are the main objects. The glass objects are the main objects appeared at Tirukkampuliyur rather late i.e. about the beginning of 4th century A.D. Their colour varies from violet to red and their size from 1mm to 15mm. The shapes include cylindrical, spherical, bioconical, barrel, Multifecetted, fluted or segmented, tabular, round, sand collared one. In Alagarai, excavations they occur in a variety of colour like white, green, yellow, blue, violet, black, red and orange. In Kodumanal excavations Black glass is the predominant variety followed by red and blue.

**GLASS BANGLES:**

At Kodumanal glass bangles in black colours have mostly two grooves on concave surface. There is a fine yellow piece with an embossed design. Some bangles are multi coloured, yellow and red being embossed black etc.

The coloured beads are of the special interest because they are reported from a number of sites on north and north western India.
dealing from about the 3rd century B.C.

The raw materials for this industry are some from outside and few locally found. For shells, they could have been gotten from the gulf of Manner, for glass objects from coastal areas. For quartz beads, the raw material available in nearby places of Kodumanal. The finished and semi-finished lapis lazuli reveal that there must have been a workshop and for this the raw material is not available at local or nearby places. From Afghanistan this raw material could have been brought\textsuperscript{77}. The finished and semi-finished beads and the raw material for this shows, that there must be a workshop and may be it export to foreign countries.

**TEXTILE:**

There were a number of spindle of about 10cm. which tapered towards one side, the headside being blunt with a convex surface, were found in Kodumanal\textsuperscript{78}. These may be spindles used for spinning cotton. This was made by iron. Even now, the Chemmimalai and the surrounded places were famous for textiles. Generally Kongu was famous for its cotton and textiles. This was because of its raw materials available here and of the climate. This was possible, if it had its attempt in early periods.

At Alagarai textile materials have been excavated. At
Tirukkampuliyur textile materials have been unearthed particularly bunch of silk threads. This shows that the textile industry had strong supporting evidence for the textile industry. This may be useful for future excavations. Blouvampatti excavation yielded more than 20 spindle whols.

**COPPER:**

Comparing other things, copper was found only in limited quantity. Mostly it was confined to small objects like spindle, needle, hook, ring and ornamental pieces. At Tirukkampuliyur, bangles the rings antimony rods and the broken piece of a rattle was excavated. Alagarai yielded toe rings or finger and small thin rods. The rings have diameter ranging from about 2cm to 5cm. Some of the bigger rings would have been used either as ear rings bangles.

In Kodumanal megalithic, there were two bowls, very fragile in condition one side and the other bowl had a hole in the centre. There was one capper object moulded tiger figurine with clay work. It is 8cm in length and 5cm in height. The inlay work consists of precious stones jasper and lapis lazule inset in triangular cavities and in the two eyes. Along with this, two copper or bronze in Adhichanallur also. In megalithic a copper ladle which was made by forging two separate plates together.
There were also found two fine ear rings made of copper spiral with hook attached. A small bell, stopper with a flower knob and a defored rim of a plate or bowl are the other objects worth mentioning. At Boluvampatti a small bull and plough were collected.

GOLD AND SILVER:

Gold and diamond were also in demand besides beads and pearls in Aryavartha. We have the authority of Kautilyas Arthasastra for the fact that in the fourth century B.C. there flourished trade, between South India and North India in shells of all kinds including mother of pearls and gold which were available in plenty in Dakishinapatha.

There are evidences for the richness of gold in Kongu. In literature there is a reference for `Kongu Gold' which was used for Chithamaram temple roof. Also there is a reference of shifting gold from river sand. Gold must have been brought from Kolar region. Kolar gold had travelled even to Indus valley. Here the gold digging has a long history. F.R. Alchin opines that the neolithic people was the first who located gold and dug it from that period gold was unearthed in Deccan and Southern Deccan. Gold was also brought to Kongu from Deccan.
Gold things are rare in the excavations. Very small objects in gold are found. May this gold be highly demanded as like other mineral wealth. But silver ones are proportionately more in quantity in Kodumanal. In the megalithic burial two solid spiral rings of gold each weighing about two grams were found. Another spiral of five loops with a diameter of 1.5 cm was ivory fragile and was made of an copper wire covered with gold foil. In Boluvampatti some Terracotta figurins are also excavated by the archaeologists.

From Kodumanal and Boluvampatti habitation sites only from silver punchmarked coins were found. In Megalithic, silver ornaments were found in fairly good quantity. Twentytwo small spirals of silver with three of four loops each were found along with a big collection of carnelian beads. There was a big 6.4 diameter spirtal of several of loops made of 3 mm thick silver wire also unearthed. This must have been a bangle. There were two rectangular bar like pieces. Twentythree mm in length, threemm in thickness. They were actually hollow inside and had six holes breadth wise. Another triangular hollow piece had 5 holes on one side and open at the opposite corner. All those three pieces were obviously moulded ones and must have been used for preparing garlands of beads using multiple threads simultaneously. In Boluvampatti 3 small
gold thin antiques found. One is leaf like object used in neck ornaments or necklace other one is small strick, length 2mm.

**Tortoise-Shell:**

The Romans had a great liking for tortoise -shell from the Indian Ocean but the best tortoise -shell came from Suvarnadvipa. In Rome it was used for veneering. The tortoise shell was exported from Muziri and Nelcynda\(^89\). It was available in Srilanka and other islands and was purchased by the Greek Merchants.

**Herbs:**

Rome perhaps imported lac from India, Siam and Peru. Some Indian herbs were used as medicine in Rome. Owing to the difficulties of communication their cost was very high\(^90\).

**Silk:**

Many articles of trade passed through or were directly exported from Tamil ports to the Roman empire and to other regions of the west. The transit goods, some of which also entered the internal exchange of Tamilakam were spikenard from the Ganges region, silk...
from China, tortoise shell from southeast Asia and the islands near the Kerala coast. The Tamil sources refer to silk as pattu. However such references do not indicate the direction or region from which it came to Tamilakam. The periplus points to China as the region from which silk reached the Ganges valley, from where it may have reached Tamilakam down the east coast to the Tamil ports, and then was sent to the west. Silk entered the internal circuit of exchange through gifts by rulers to panar (bards) and as a luxury item of the ruling and urban elites attire.

Cardamom:

Spice a major item of export came predominantly from the western hills of Kerala, particularly pepper and cardamom. However, with the increase in the demand for spices were also procured from southeast Asia and sent to the Tamil ports to be shipped on to the west. Fragrant woods, although available indigenously, were also a part of the transit trade, for they came from southeast Asia, in addition to those from the hill regions of South India.

Cardamom exported to the west is found in Travancore, Malabar and the highlands bordering the districts of Madurai, Tirunelveli and Dindigul. However strangely enough, there is hardly any direct reference to cardamom in the Tamil sources, although it is well known to the classical accounts.
"Argaritic" muslin:

Although "Argaritic" muslins from Uraiyur were in demand in the Roman world, Tamilakam imported the Kalagam and Kalingam (two varieties of fine fabric) from Burma and Kalinga respectively. This would also indicate that the trade in textiles grew in volume and Tamil ports exported both locally produced "Argartic" fabrics and those for transit. These fabrics also entered the internal circuit of exchange, mainly through gifts to poets and bards. A variety of thin cloth from Egypt is also known to have been imported in addition to kalagam and kalingam.

Cotton fabric:

Cotton fabric was the important manufactured item of export apart from jewellery, produced both in the Cola and Pandya regions. While the Arthasastra refers to the fabric from Madurai in the Pandya region, the periplus refers to the "Argaritic" muslins of Uraiyur in the Cola land. The Tamil sources refer to several varieties of cotton fabrics. Muslin was a fine cotton cloth. It was woven in Tamilakam and resembled steam or vapour and had so fine a texture that the trades could not be easily traced. It had fcoral payyerns. It was in great demand among the Romans. The Silappadikaram refers to
thirty two varieties of cotton fabrics. Archaeological evidence in this regard is not highly illuminating although the occurrence of terracotta spindle whorls in Kunnattur, Odugathur and Sanur and in Kodumanal, dyeing vats in Arikamedu, Vraiyur and Vasavasamudram seem to indicate their manufacture on a considerable scale.

Beryl:

Although variety of gems seem to have been exported from the Tamil ports, the evidence on muttu or oearls is direct and indisputable. Of the other gems, beryl is known to be an important item of export, although it is not mentioned in the Tamil literature itself. The beryl mine of Padiyur in the coimbatore district are well known. Beryl mines have also been located in Vaniyambadi in the Salem district and additional sources were tapped by the second century A.D. perhaps in the days of Ptolemy when Punnata near Melkote in Karnataka and Sri Lanka may also have been exploited.

Excavation in the Coimbatore region have brought to light six-sided beryl prisms which have been interpreted as evidence of exchange of beryl for Roamn coins. It is not clear where and how beryl entered long-distance trade. The Arthasastra mentions vaidurya (beryl) which according to the commentators, came from the southern
mountains. The term vaidurya may well have been a Dravidian Origin. It is also probable that the Greek word for it berullos is derived from vaidurya.

Betel leaf:

Malabathrum 'from the interiors' was another export from the west coast and has been identified as betel leaf or cinnamon bark, although it is said to be of inferior quality when compared to that cinnamon from China, Sri Lanka, Southeast Asia and the Himalayas.

Nard:

Yet another item of export which figures along with malabathrum seems to be a grass or leaf (may be lemon grass) found in the Chera region. It was used to extract an oil, a fragrant one, for cosmetic purposes (Cymbopogam Nardus) and the Seleucids are believed to have attempted to naturalisze it in their country. It was known to Pliny and the periplus as the sweet-smelling oil of the Nard—the word probably derived from Narantam in Tamil.

Forest Products:

Among the forest products, words of all sorts—ornamental and aromatic—entered this commerciaql network. The most notable were
sandalwood, teak, ebony and eaglewood, most of which grew in the hilly tracts of Coimbatore, Salem, Malabar and Karnataka. None of them however, is listed among the exports from the Tamil ports by the Periplus. Though the forests of Central India could have been tapped, the forests of Tamilakam may also have been a major source.

The imports to South India, several of which are known from the periplus, consisted of coin, topaz, coral, thin clothing and figured linens, antimony, copper, tin and lead, wine, realgar and orpiment and also wheat, this probably for the Graceo-Romans in the Tamil Ports wine is the most conspicuously mentioned item in the sangam works in a variety of contexts, particularly in connection with the ruling and urban elite. Roman wine was very popular with the Tamils, who were familiar with its quality and fragrance.

Horse:

Horse, for the breeding of which the southern climate was not conducive, have always been imported into South India, mainly from the Arab countries. The pattinappalai refers to milk white steeds imported into Puhar, while the Meduraikkanci makes a reference to their import to the Pandyan ports. The Tondainadu port of Nirpkeyyar received horses in ships. Horses were also gifted by rulers to bards. Horsebits
or articles associated with the use of horses are reported in the early leaves of excavations at Sanur, Kunnattur and Adichnallur.

The Hebrew thuku (peacock) is derived from the Tamil thokai. The Hebrew ahal is derived from the Tamil ahil. The Hebrew almug is derived from the sanskrit valgu and the hebrew Koph (monkey) from the sanskrit Kapi. The Hebrew Shenhalbin (ivory) has been derived from the sanskrit Chhadonta. The Hebrew saden has been derived from the Greek sindon and the sanskrit sindhu. It is also possible that in the 9th century B.C. Indian elephants were exported to Assyria. On a obelisk of Shalmanesar III an Indian elephant has been represented. It is called baziyyation in the inscription which may be a form of Sanskrit vasita, a synonym of the cow elephant. Scholars are of the opinion that the Indian elephants went to Assyria through the Hindukush route.

Babylon had perhaps a small colony of the South Indians. From the business tablets found from the house of Murushu from Nippur, it is evident that the house was carrying on business in India. It is perhaps due to commercial relation that some words of tamil origin as rasi (rice, Greek oryza), Karur (Cinnamon, Greek karpions), injiber (dry ginger, greek jigiberos), long pepper (Greek pepari) and sanskrit vaidurya (crystal, Greek peryks) entered the Greek language.
Oil

Gingelly oil which we know from the periplus was regularly exported from India in later times. Anointment was a ceremony undergone by kings and priests and the ril was also required for making unguents with. In Egypt and Syria there were manufactories where these unguents were prepared.

Hounds:

Indian hounds were much valued by foreigners. According to Herodotus, the Persians of his time caused the supplies of four large villages in the plains round Babylon to be appropriated for the feeding of Indian hounds. South Indian hunting dogs were well-known for their ferocity. They were usually described as kadanay the fierce hound, and were kept enchained.

Serpents:

Serpents including the cobra called Aspis by the Greeks and the Python were other of the living animals exported. Strabo saw in Egypt a serpent nine feet long brought from India.

Of the articles that were imported into the Roman empire from India, there is ample information in the Greek and Latin books of the period.
The Stress was undoubtedly on the export and import of elite and luxury goods such as horses, gold, gems etc, which were meant for elite consumption and not for local exchange. Chiefly families acquired and used them for exchanging their status and prestige and legitimised it by conferring gifts on poets and bards. The importance of primitive valuables has been stressed for their sociopolitical significance in early societies.

2. V. Kanakasabhai, The Tamils Eighteen hundred years ago. p. 31


5. Ibid.


8. Agananuru verse 59 line 12

9. Perungathai I 54.8-11

10. Agananuru 143.5

11. Motichandra Trade and Trade routes in Ancient India, p. 126.


13. Perurbanarruppadai verse 307-308


16. Agananuru 149:7-11; Purananuru 343:3-6


19. R. Champakalakshmi Trade Ideology and Urbanization South India 300 B.C to A.D. 1300 p. 186

20. Ibid.

21. Purananuru verse 374 line 10-13

22. Purananuru verse 130 line 2

23. Agananuru 125,8-13, 9,10


28. S. Suresh- Roman Antiquities in Tamilnadu p. 7


30. Agananuru 13.1
31. Silapathikaram II: 14; 186-200


34. R. Krishnamurthi Pandiyar Peruvaluthi Nanayam 1987 p. 2


37. Ibid.


40. R. Nagasami Karur Vanchi p. Nil

41. S. Suresh Op. Cit p. 47


44. S. Suresh Op. cit 53

45. Ibid.

46. Ibid.

47. Ibid.
48. Ibid.
49. Ibid.
50. Ibid - p.55
51. Ibid.
52. R. Nagaswami Roman Karur a Peep in to Tamils past p.104
53. Ibid.
54. Ibid.
55. S. Suresh Op.Cit p.3
56. R. Champakalakshmi - Trade ideology and urbanisation South India 300 B.C to A.D 1300
57. Martimer Wheeler: My Archaeological Mission to India and Pakistan. p50
59. S#<5M*esh Op.Cit p.43
60. Ibid
61. Kodumanal Excavation Report
62. Ibid
63. T.V. Mahalingam Report on the Excavation in the Lower Kaveri
valley

64. Kodumanal Excavation Report

65. Ibid


67. Kodumanal Excavation Report


69. Kodumanal Excavation Report


71. Ibid

72. Ibid

73. Ibid


75. Kodumanal Excavation Report

76. Ibid

77. Ibid

78. Kodumanal Excavation Report

80. Kodumanal Excavation Report

81. Ibid

82. Himanshu Prabha Ray Monastery and Guild. P.2

83. E.I. Vol XXX P.246.

84. Ibid

85. Kodumanal Excavation Report

86. Ibid

87. The Hindu

88. Kodumanal Excavation Report

89. Motichandra, Trade and Trade Route in India p.23

90. Ibid

91. Pattinapalai 1.107


93. Purananuru 41:9 Pattinapalai 1:191 Silappathigaram XIV:104-12


96. Ibid

97. Silappathikaram VI: 88


104. Ibid

105. Ibid p. 190


108. Ibid

110. Ibid p.201

111. Ibid p.197
