Pattanam archaeological site : The wharf context and the maritime exchanges

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Abstract

Since 2007 the archaeological excavations at Pattanam, located on the southwestern coast of India, were undertaken by the Kerala Council for Historical Research (KCHR) Thiruvananthapuram. These efforts unearthed an early historic (1st c BCE – 5th c CE) multi-cultural port site, which is now widely considered as an integral part of the ancient port of Muziris. This paper discusses the material evidence related to the maritime exchanges at Pattanam, including a wharf context and the importance of the site in the transcontinental interfaces in antiquity.

The most striking material evidence unearthed at Pattanam is the enormous quantity of terracotta objects, ranging from sherds of a variety of jars and pots to roof tiles and bricks. This paper will specifically examine the Indian and non-Indian distinct pottery of the Pattanam ceramic assemblage.

The excavations in the northeastern part of the site revealed a wharf and warehouse structure, a wooden canoe made of *anjili* in a waterlogged context, along with nine bollards of teak. The wharf was a platform made of a mixture of laterite, clay and lime, with an elaborate brick lining where the reclining platform touches the water. The waterlogged area also produced a plethora of paleo-botanical and other archaeological evidence prompting one to propose a hypothesis that Pattanam is a major emporium of the spice trade network of the Early Historic Period (1st c BCE – 5th c CE). This 'priceless' evidence from the wharf context and the adjacent waterlogged area are breakthrough finds for understanding the Early Historic inter-continental exchanges that flourished as part of the ancient spice trail that linked Asia, Africa and Europe.

The paper concludes by examining the domineering distribution of local pottery as an example in pointing out the problems of Euro-centrism in the perspectives on long-distance exchanges.

Maritime exchanges and the southwest coast of India

The processes and impacts of long distance maritime exchanges have always been fascinating fields of enquiry for researchers in archeology and history, the foci of investigations being mostly ancient port sites. Early maritime exchanges were taking place either through circuitous routes or mid-ocean routes or both and it is important to distinguish and correlate them for a better understanding of the early connectivities (Boivin and Fuller 2009:113-180; Fuller 2011:544-558). Small vessels shuttled between jetties and ports through the short distance circuitous routes, as "mobile bazaars", probably for the supply of essential items (Thapar 1997:11-40). Mid-ocean routes, on the other hand, mark a distinct phase of bulk trade in non-perishable/luxury items, new navigation technology, expertise and heavy investments. The establishment of mid ocean routes is often attributed to the "discovery" of monsoon winds without taking into

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account the long-term dynamics of maritime activities that existed before the "discovery".

We have about half a dozen sources of various genres that refer to the key Early Historic port sites in the Indian Ocean Rim (Cherian 2009:65-79). The most important among them in the southwest coast of India were Tindis, Muziris, Nelcynda and Becare. Mostly they are mentioned in the non-Indian textual sources. The important ones are Strabo's *Geography* (c.1st c BCE / CE), the *Periplus Maris Erythraei* (c.CE 40 -70) by an unknown author, Pliny's *Natural History* (c.Mid 1st c CE published after 77) and Ptolemy's *Geography* (c.150 CE). The other sources include the *Muziris Papyrus* (2nd century AD trade agreement between a Muziris merchant and a banker, probably based in Alexandria) that reveals in some detail the huge quantum of trade between Muziris and the Red Sea/Mediterranean network. *Charition*, a Greek play or mime about two lovers eloping to India, also has references on trade. *Cosmas Indicopleustus* refers to the St Thomas Christians on the Malabar Coast as well as the pepper trade through five ports. But interestingly, the port of Muziris is not in his list. The *Peutinger* table, a map of 2nd century trade routes, shows Muziris adjacent to the temple of Augustus; the Western Ghats is marked as, "where elephants are born". The Indian sources on maritime exchanges are mostly classical Tamil literature and epic poems like Sangam literature, and *Chilappatikaram*. The Malabar Coast also abounds in myths and legends that mention trade and ports, but being products of social imagination, they serve more as complex riddles than sources for the study of the past (Cherian, *et al*. 2007).

Most of the ancient port sites elsewhere on the Indian Ocean littoral have been identified on land but those on the southwest coast of India were believed to have been wiped out forever since none of the searches for them was fruitful (Achan 1946). The southwest coast of India also had not yielded a single habitation site until the discovery of the Pattanam site. Though copiously mentioned in ancient literature and travelogues, their invisibility on ground was intriguing (Gurukkal, *et al.* 2001:35-50). The ethnographic history of this coastal belt is eloquent about various non-local trading communities and their belief systems that co-existed (The Semitic religions of early Judaism, Christianity and Islam claim to have had set foot on the Malabar Coast in their early days). It becomes more mysterious when most of the contemporary port sites such as Korkai, Alagankulam, Poompuhar (Kaveripattinam) and Vasavasamudram could be successfully investigated on the Coromandal coast (southeast coast of India) following Arikamedu (Veeram Pattanam) excavations (Begley 1996; Begley 2004). The southwest coast of India remained an archaeological vacuum (except a few coin hoards) as far as its legacy of international maritime exchanges was concerned. At the same time studies and excavations on contemporary sites and trade routes had yielded evidence for intercontinental maritime connectivity (Romanis, *et al.* 1997; Sidebotham 2011).

Pattanam - background

Pattanam is a typical Kerala coastal village, thickly populated and densely cultivated. Interestingly, the place name "Pattanam" has etymological significance, in nearly a dozen Indian languages, it means town or port city.

The surface surveys in the 1990s were conducted by a small group of researchers who shared boundless excitement in teaching, learning and practicing

archaeology, and finally led them to the site (Shajan, *et al.* 2004:312-320). The present multi-disciplinary excavations evolved from that humble beginning.

Pattanam - location

Pattanam *(N. Lat. 10°09.434'; E Long 76°12.587'*) is a densely populated hamlet in the Vadakkekkara revenue village in Paravur taluk of Ernakulam District in Kerala, India. The site is located in the delta of the river Periyar about 25 km north of Ernakulam /Kochi. About one km south of the site flows the Paravur Todu, a tributary of the river Periyar which is about six km to the north of Pattanam. The Arabian Sea is about 4 km west of the site. About one km from the western boundary of the site is the Tattapally River or Munambam kayal, a backwater body that runs parallel to the Arabian Sea. Another noteworthy feature of the site is the network of canals linking the area with the Paravur todu and the Tattappally river and many residents remember country boats plying these canals until the mid 20th century (Cherian 2008:5-20).

Pattanam – chronology

The chronology of the Pattanam site spans across three millennia: the story beginning with the Iron Age habitation, with the commercial peak between 1st c BCE and 5th c CE and life going on with its inbuilt continuities and discontinuities. High precision Accelerator Mass Spectrometry (AMS) Carbon^{14} (C14) dating on the charcoal samples from the aeolian sandy layers at depths varying from 340 cm to 370 cm confirm that native settlement had begun at Pattanam in the Iron Age phase (around 1000 BCE) (Cherian, *et al.* 2009:236-40).

Pattanam- features

Pattanam has maritime features comprising a wharf context and other allied port features, urban features comprising of remains of planned architecture, personal adornment articles, fine wares and the industrial feature comprising lapidary workshops, kiln and furnace contexts (Cherian, *et al.* 2010; Cherian, *et al.* 2011).

The attempt in this paper is to look closely at the wharf feature as well as the non-local pottery assemblage and initiate discussion on the significance of Pattanam in long distance and regional maritime contacts.

To be more objective and balanced in assessing the long-distance exchanges, an effort is also made to bring in the role of the local in facilitating them. Respecting the primacy of material evidence, one of the fundamentals of the archaeology discipline, observations and inferences are made from literally touching and brooding over the objects excavated from Pattanam.

Table 1. PATTANAM EXCAVATIONS FROM 2007-2011 - ANTIQUITIES

Sl no	Name of object	2007	2008	2009	2010	2011	Grand total
1	Gold	1	2	4	38	22	**67**
2	Copper objects	6	27	18	68	42	**161**
3	Coins	13	12	18	31	24	**98**
4	Lead objects	4	19	23	63	100	**209**
5	Iron objects	529	758	906	3033	2358	**7584**
6	Glass beads	1122	1915	6373	22214	7094	**38718**
7	stone beads	50	7	108	234	148	**547**
8	Spindle whorl	4	6	5	15	9	**39**
9	Cameo blank	2	6	3	8	29	**48**
10	Glass fragments	35	53	138	334	778	**1338**
11	Lamps	0	4	4	8	22	**38**
12	Ring stones	0	0	0	15	9	**15**
TOTAL ANTIQUITIES							**48,862**

Table 2. PATTANAM EXCAVATIONS FROM 2007-2011 - CERAMICS

Sl no	Name of object	2007	2008	2009	2010	2011	Grand total
1	Amphora	177	286	572	2215	2779	6029
2	TGP	71	107	66	422	861	1527
3	Torpedo	50	156	142	767	1983	3098
4	Rouletted	1037	1266	442	3320	2469	8534
5	Terra sigillata	2	7	0	2	111	122
6	Chinese	10	31	28	106	64	239
7	Graffiti	41	0	33	19	2	95
8	Brahmi	5	2	0	1	2	10
9	Local ceramics	517831	367079	286475	1471870	894209	3537464
TOTAL CERAMICS **Unidentified distinct pottery adds another 94671 sherds to the assemblage.**							**3557118**

Pattanam – finds

Five seasons of excavations have unearthed a treasure trove of antiquities of an unprecedented magnitude, probably exceeding all contemporary port sites on the Indian Ocean littoral. The major finds include ceramics, lapidary objects, metal objects, coins, faunal and botanical remains. (Cherian, *et al.* 2007; Cherian, *et al.* 2008; Cherian, *et al.* 2009; Cherian, *et al.* 2010; Cherian, *et al.* 2011) See the consolidated data of antiquities and ceramics in Tables 1 and 2. The voluminous quantity of antiquities unearthed at

Pattanam displays a picture of a 2000-year-old polychromatic and polyphonic urban culture with maritime connectivity to three continents - Asia, Africa and Europe.

Ceramics and terracotta objects constitute the majority of artifacts from Pattanam. The terracotta objects include lamps, spindle whorls, toy wheels, discs (with and without perforation), hopscotches, oven knobs and stoppers, tiles, bricks, ring-wells and the enormous quantity of potsherds.

We have broadly classified the ceramic assemblage into local pottery and fine/ distinct ceramics. The fine pottery includes the Indian, foreign and some unidentified types. The distinct ceramic assemblage comprises the Mediterranean (Roman) pottery- which includes amphora (6029), terra sigillata (122), the West Asian torpedo jar sherds (3098) and Turquoise Glazed Pottery (1527), along with the Indian Rouletted Ware (8534), and unidentified fine wares (94671). The local pottery has an astonishing dominance with around 3.5 million sherds. (Cherian, *et al.* 2007; Cherian, *et al.* 2008: Cherian, *et al.* 2009; Cherian, *et al.* 2010; Cherian, *et al.* 2011).

Amphora is a terracotta jar, used across the Mediterranean world and beyond, for storage and transportation of wine, olive oil and garum (fish sauce) (Roberta, 2008 a). The Amphora sherds at Pattanam vouch for India's linkages with the Roman world in the Early Historic period. Pattanam has yielded the maximum number of amphora sherds ever found from an archaeological site in the Indian Ocean rim. 6029 Amphora sherds were found from the five seasons of Pattanam excavations (Cherian, *et al.* 2007; Cherian, *et al.* 2008; Cherian, *et al.* 2009; Cherian, *et al.* 2010; Cherian, *et al.* 2011).

According to Roberta Tomber (Tomber,2008 b), the majority of Roman amphorae sherds found at Pattanam, including those with double-rod handles, were transport-containers for wine. The double rod style originated in the fourth century BCE, along with the Greek Koan amphorae produced on the island of Kos (Whitebread 1995). Their production was primarily during the Hellenistic period (c.336- 30BCE) but it continued into the Roman Empire period through the first century CE (Tomber 2008 b).

Tomber (2008; 2011) further identifies Dressel 2-4, the most common variety found at Pattanam as belonging to Kos, (Greek Island) Campania, (Southern Italy and Bay of Naples) and Cilicia (Eastern Turkey and Syria). The provenance of other identified sherds are Catalan (Spain), Goul (France), Rhodes islands (Greece) and Egypt. The amphora sherds from the five archaeology field seasons need to be studied comprehensively to understand more about the transactions between India and the Mediterranean and Red sea regions.

Terra Sigillata is another imported Italian ceramic referred to earlier as Arretine ware. This is strong evidence for maritime exchanges. This fine quality, stamped table ware, has red slip, smooth waxy surface and fine gloss. A total number of 122 sherds (subject to confirmation by the expert) of Terra sigillata has been found from Pattanam (Cherian *et al*. 2011; Tomber 2011).

Indian Rouletted Ware (IRW) are fragments of Indian fine pottery including bowls and dishes. Large quantities were unearthed at Pattanam. The provenance of rouletted wares from other sites has already been identified as from the Bengal region (Gogte 1998). This Indian fine pottery found in almost all Indian Ocean rim sites signifies the Indian role in the South Asian trade network. Pattanam excavations produced the

largest ever assemblage of the Indian rouletted ware. (Cherian et.al 2011) It should also be noted that roulette ware has not been reported from the southwestern coast of India till Pattanam excavations. The rouletted ware sherds are the largest in quantity (8534) among the Pattanam identified distinct ceramics.
The occurrence of IRW at the lowest layers of occupation is a pointer to the probable contacts with other parts of India, even during the Buddhist and Jainist periods (Cherian, *et al.* 2007; Cherian, *et al.* 2008; Cherian, *et al.* 2009; Cherian, *et al.* 2010; Cherian, *et al.* 2011). These sherds can further deepen our understanding of the Indian Ocean trade dynamics.

Turquoise Glazed Pottery (TGP) referred in literature also as 'TURQ', Sassano-Islamic, alkaline ware and alkaline glazed ware, is the term used to refer to a glazed earthen ware that has a light beige fabric and a glaze that can be green, yellow, white or blue in colour. The glaze is often badly weathered. The forms normally consist of bowls, plates and jars of varying sizes. This class is part of a broad tradition of alkaline glaze earthenware that goes back to the Neo-Babylonian period (c.626 BCE - 539 BCE) in Mesopotamia and appears to have continued well into the Islamic period (post 7th c CE) (Kennet 2009). Earlier studies have identified the emergence of these glazed wares in Mesopotamia and Iran (Hannestad1983:i,15). It is also believed that TGP was principally manufactured in Southern Iraq possibly near Basra, although it is possible that other centers existed (Mason, *et al.* 1991: 52).

TGP has wide distribution around the Indian Ocean, mostly but not exclusively on coastal sites, reaching as far as Japan in the Islamic period (Glover 2002). It has been traded to sites in Eastern Arabia as early as the 5th century BCE (Hojland and Anderson 1994).

On the South Asian side of the Arabian Sea some TGP were found in coastal and inland archaeological sites of Srilanka and India (Kennet 2009). Derek Kennet (2009) further reports that Pattanam sherds could potentially, at the very broadest level, be dated as early as 5th century BCE to as late as the 14th century CE. However, based on his closer analysis of the sherds from the 2007 archaeological field season, Kennet (2009) concludes that, those may most likely be dated between the 3rd/2nd century BCE to the 7th/8th century CE.

Unidentified distinct pottery is the substantial quantity of pottery (94671) and may be a clue to the linkages of the Malabar Coast with places and people hitherto unknown. The pre-occupation with the Romans would have submerged the local and other regional categories.

Local Pottery is the largest assemblage and probably the most challenging study material at Pattanam. Truckloads of local pottery were recovered and sherds of 3 cm and above were quantified by size, number and weight. The diagnostic sherds are closely studied and the rest are stored. As mentioned earlier, the local pottery sherds amount to a staggering 3.5 million. They express the various aspects of the socio-cultural life of the residents at the site of Pattanam. The local pottery included containers for day-to-day use, industrial use and architectural materials such as bricks, tiles and ring wells (Selvakumar 2010; Report on local pottery assemblage 2007). They would be crucial to the understanding of the social history of Tamilakam (the triangular

tip of South India comprising present states of Kerala, Tamilnadu, Pondicherry and parts of Karnataka).

Stratigraphy sequence of amphorae and TGP are in resonance with the chronology suggested by Tomber (Tomber 2008 b) and Kennet (Kennet 2009). Most of the sherds are from the Early Historic layers when the commercial transactions were at their peak. Amphorae very clearly are of the Early Historic layers, while TGP sherds were found in the Iron Age-Transition layers. This may suggest commercial activity at Pattanam site in the pre-Roman phase. Interestingly, IRW was found in all the stratigraphic layers of Pattanam, except the Iron Age and modern layers, suggesting the prolonged role of regional trade. In spite of the intensely disturbed condition of the site, the stratigraphic pattern at Pattanam remains uniform. See the illustration of a trench section (Figure 1).

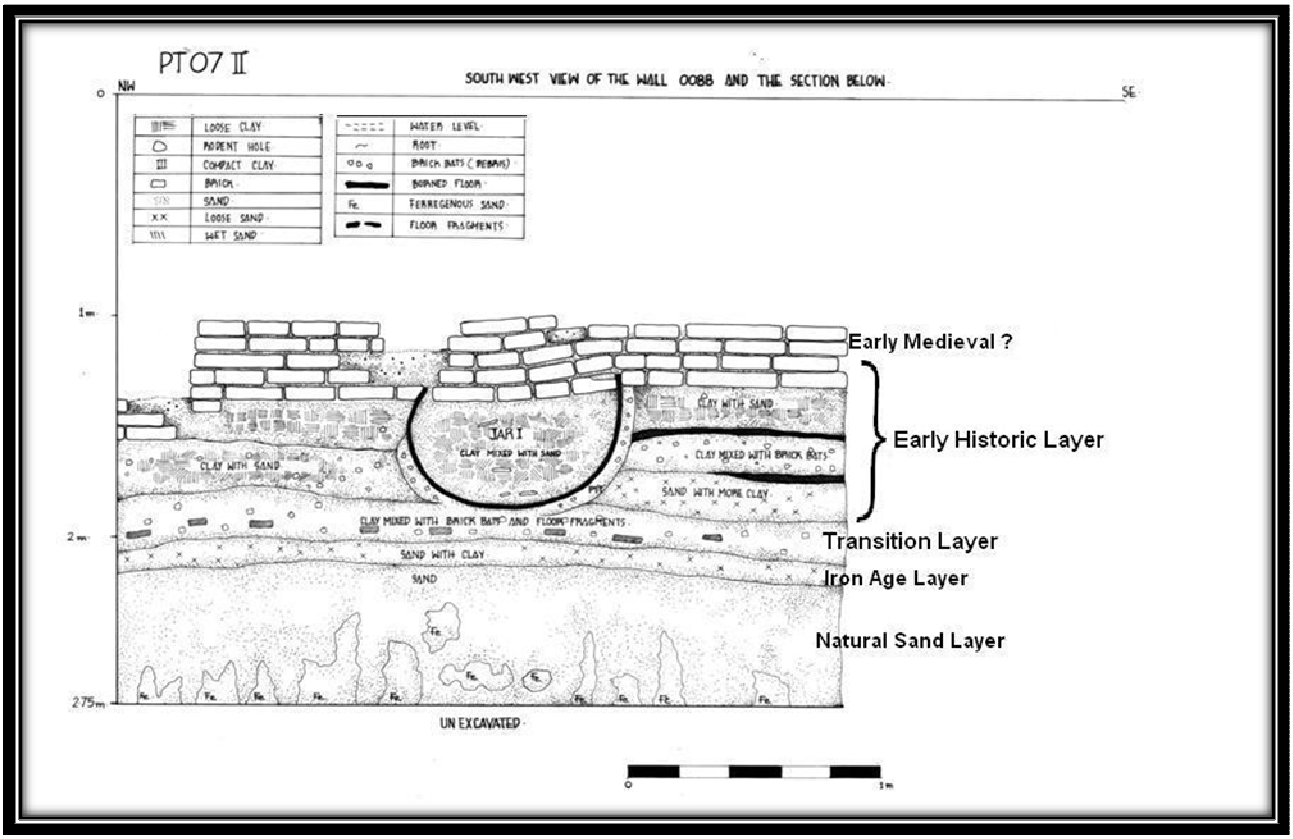

Figure 1. Archaeological illustration of a trench section in the Pattanam site.

The wharf context is the most striking structural feature at Pattanam. It is situated next to a port, with a canoe, bollards and an adjacent commercial ware house area. The wharf was found in the northeastern boundary of the site close to a water logged deposit. The part of the wharf that could be excavated was a huge structure (+6m in length and 7.3m in width), made of a mixture of laterite granules and had a nineteen course outer brick lining. The waterlogged area adjacent to the brick-lining had a dugout canoe made of single log of *Anjili* wood (Bhatt 2007). The intact portion of the highly decayed canoe measures ca 6m in length and 30 cm in breadth and the AMS dates put the C14 calibration age range from 1300 to 100 BCE (i.e.700± 600 cal. BCE with 95.4% probability) (Cherian, *et al.* 2009:236-40). The AMS dates for the teak bollard sample

puts the C14 calibrated age range from 1100 BCE to 1300 CE (i.e 100± 1200 cal. CE with 95.4% probability) (Cherian, *et al.* 2009:236-40). The layer below the canoe had amphorae, rouletted ware, TGP and other ceramics, as a floor for the water-logged area of the wharf.

Paleo-botanical evidence. Beneath the ceramic layer of the water-logged area of the wharf, at a depth of 3m, was a rich collection of botanical remains with a layer of clay over them. Apparently this layer of 25-35 cm thick clay prevented oxidation at the lower layers and preserved the paleo-botanical remains. The botanical assemblage included black pepper, bread fruit seed, grape pips, teak, coconut fronds, coconut shells, prop root base of areca nut, bamboo pieces and indeterminate wooden tissues. In 2008, cardamom, rice, wheat, green gram, lentil, mango seeds, Indian gooseberry, Indian jujube, Borassus palm, brinjal, ladies finger and gourds were added to the list (Kajale 2007; Kajale 2008). Another important botanical item distributed in almost all the trenches was frankincense. In 2007 and 2008 archaeological field seasons Teak (*Tectona grandis. L.f.*) Anjili (*Artocarpus hirsutus Lamk.*), Punna (*Calophyllum inophyllum.L*), Kadukka (*Terminalia chebula Retz.*) and Karimaruthu/Thenmavu (*Terminalia crinulata H.heyni ex Roth.*) were identified (Bhatt 2007; Bhatt 2008). The ecofacts from the wharf context, as well as the antiquity of the local canoe reiterate the available information on the spice trade that flourished in the period of the Roman empire (27 BCE to 393 CE). The *akananooru* poem 149, refers to the pepper trade where as *puranananooru* poem 343 mentions about a water craft *kazhithoni* resembling the dugout canoe excavated at Pattanam (Selvakumar 2008:21-28). This also corroborates with information from the *Periplus* that Roman ships anchored off shore and collected spices and other trade items using small watercrafts (lightering).

Problems in perspective. Euro-centric perspectives, at the cost of the local, dominated the history of long distance trade. At no point has the local pottery been a tool for understanding dynamics nor used as a comparative balance sheet of long distance trade. However, over the years, perspectives have shifted from Imperial Roman to Indo-Roman and Indian, but the latter is yet to gain its equilibrium and rightful place.

It would have been impossible for long distance maritime trade to evolve, survive and flourish without adequate regional resources - both men and material. Pattanam had the presence of artisan groups as evidenced by remains of lapidary, metallurgical and kiln activities.(for details Cherian et al 2010&'11). The regional support systems and networks were never duly acknowledged while discussing the larger exchanges across the oceans. The cultural transmissions too were considered unilateral affairs.

The reference to the local pottery is made in this paper mainly to bring parity in the understanding of long distance maritime contacts. Earlier perspectives (colonial) concentrated on the non-local antiquities and ceramics and projected Indian port sites as Roman sites or at the most as Indo-Roman sites! The Pattanam site needs to be understood primarily as an Indian site with Roman or West Asian connections.

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