

Unearthing Pattanam

HISTORIES, CULTURES, CROSSINGS



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A view of the excavated wharf, with a wooden canoe and bollards radiocarbon dated to the period between the 1st century BCE – 1st century CE.

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HISTORIES, CULTURES, CROSSINGS

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with

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CATALOGUE FOR THE 2014 EXHIBITION

NATIONAL MUSEUM-NEW DELHI
KERALA COUNCIL FOR HISTORICAL RESEARCH

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The Kerala Council of Historical Research (KCHR)

The Green Archaeology Project

Acknowledgements

FOREWORD



National Museum is home to nearly 200,000 objects that represent 5000 years of Indian Art. Among these is a significant collection of pre-historic objects from the Indus Valley Civilization, on permanent display. These collections, mostly terracotta, bronze and stone objects are star attractions of the Museum owing to their antiquity. When they were discovered in the 1920's they pushed back the history of the Indian subcontinent by several thousand years and made our civilization contemporaneous to Egypt, Mesopotamia and China.

In November 2014 National Museum hosts an important exhibition titled *Unearthing Pattanam: Histories, Cultures, Crossings*. This exhibition showcases a large collection of finds from the historic site of Pattanam in Kerala in South India. Here the Kerala Council of Historic Research (KCHR) had been carrying out excavations since 2007. This excavation and its findings have proved to be extremely pertinent in a similar way as the Harappan finds. The excavations at Pattanam have not only indicated the antiquity of the Southern Indian ports to be of nearly 3000 years, they have also brought to light the fact that this important town was a hub of international exchange, trade and culture sharing.

I have been closely following the excavation in the past years and when the opportunity came to National Museum to host the exhibition, I was eager to share this

knowledge with the public. Ably curated by Prof. PJ Cherian, Director KCHR and the lead Archaeologist of the project, the Pattanam Exhibition has put back archaeology in the popular domain, intrigued visitors about India's ancient cosmopolitan past and has shown how India enriched the world. This handbook written by Dr. Cherian is therefore a gem of information about the Pattanam site and its many histories.

Drawing large numbers of people into the Museum, the Exhibition is on display from 28th November 2014 till 10th January 2015. I am happy to present this book to audiences who are curious and keen to know about Pattanam. I am certain that deeper research and continuing excavations will unearth more facts and interpretations related to the site, and merit many more exhibitions.

I would like to particularly thank Sahapedia for their cooperation on this project, the National Museum team for realizing the exhibition and the exhibition designer Siddhartha Chatterjee for lending visual language to the amazing Pattanam story. Many senior historians have enriched the case of Pattanam through their interpretations and the layers of history that Pattanam will be known for is undoubtedly their contribution.

Dr. Venu V

Director General, National Museum





THE CURATOR'S INTRODUCTION

Beyond the trenches, the tools, the toil, the priceless artefacts, beyond research, publications and museums, archaeology is also a rigorous intellectual journey into one's own deep ancestry on the planet.

To some, such archaeology-enabled journeys may seem irrelevant to the way we look at and shape our present and future. But whoever has had the opportunity to step into pre- or early history would admit to its power to influence our thinking, our social perceptions of identities and relationships, our prejudices, texts, technologies, politics, knowledge, if not life itself.

The invitation from the National Museum to showcase the Pattanam excavations, and the challenge of having to curate it with a view to providing a glimpse into human proto-history, were daunting. Distilling the eight years of the Pattanam excavations in a way that would be accessible without losing academic rigour was a tough task for the curatorial team.

THE RESEARCH AT PATTANAM

The excavations carried out at Pattanam since 2007 by the Kerala Council for Historical Research (KCHR) have revealed the global significance of an otherwise ordinary village in the Ernakulam district of Kerala state. Located 4 km east of the Arabian Sea coast, 25 km from the city of Kochi, Pattanam is a typical archaeological mound which stores the history of some 3000 years from circa 1000 BCE.

Most of the excavated objects belong to the Early Historic period (3rd century BCE to 5th century CE). The objects and features discovered suggest that Pattanam was probably the ancient port of Muziris, or Muciri Pattinam, mentioned in classical Tamil, Greek and Latin sources as a key port in the maritime networks of the period. The Pattanam finds point to the presiding role of the Indian sub-continent in transforming the Indian Ocean into a trading lake.

Pattanam throws light on Kerala in the period before the 9th century CE, on which there was scanty evidence until now. The architectural features and allied finds such as well-made burned bricks, toilet features, roofing tiles, ring wells, the spatial orientation of structures, all indicate urban living at the site some 2000 years ago. The industrial character of the site is suggested by the scale and range of specialisation in technology—metallurgy, lapidary industries (cutting, polishing or engraving of gems and other stones), cotton-weaving and terracotta production.



HISTORIES

Every archaeological site will have a story to tell. Likewise, Pattanam and its finds tell the story of how, circa 2300 years ago, the world came to the south-west coast of the Indian subcontinent, which became a major maritime trading hub. Even the smallest or the most ordinary object excavated brings with it a fraction of the material culture of its times—techniques of making, practices of exchange, bodily adornments and living spaces—and thus some bits of the history of the times. The beauty of the science of archaeology is in this slow unfolding of human history.

CULTURAL CROSSINGS

As mentioned earlier, the excavated finds, the location, and ancient Tamil and other written sources, point to the possibility that Pattanam may indeed have been the legendary port of “Muciri Pattinam” or Muziris.

The impressive range of evidence unearthed at Pattanam on maritime exchanges across the Indian Ocean, the Red Sea and the Mediterranean littoral indicate trans-oceanic trade that began circa 15 centuries before what the world has hailed as the beginning of ‘globalisation’ i.e. the voyages of Christopher Columbus and Vasco da Gama in the last decade of the 15th century CE.

The significance of Pattanam is that it is an outstanding example of local settlers, who, with their technology, craftsmanship, architecture and immense natural wealth, made excellent use of both land and sea, contributing to trans-oceanic cultural crossings. Pattanam may aptly be called the ‘Mound of Crossings’.



WHAT TO LOOK OUT FOR

One of the trenches dug during the 2014 excavation season (PT 14 LI) is replicated in the Exhibition, along with the original tools used. Located in the elevated area of the Pattanam mound, the 5 m x 4 m trench had five cultural layers, representing the five cultural periods distinguished at Pattanam: Modern, Medieval, Early Historic, Iron Age–Early Historic transition, and the Iron Age periods.

The science and methodology employed in the Pattanam excavations are shared through a short documentary, and the panel ‘Excavation Wall’. The film ‘A Glimpse into the Pattanam Excavation Methodology’ gives an overview of procedures from the initial stages of the identification of a site to the publication of preliminary reports.

A select number of excavated finds are on display: local and non-local ceramics, beads, semi-precious stone artefacts, metal objects, coins, gold ornament fragments



and botanical remains. The objects on display are only a fraction of the archaeological record excavated at Pattanam.

Some of the significant immovable features, namely the urban and port contexts, are displayed as panels. Other panels on display are the Pattanam cultural sequence or chronology, the ancient trade routes as illustrated in the Peutinger Table (one of the oldest maps of the world), ports contemporary to Pattanam, and textual references to Muciri Pattinam or Muziris. Also exhibited are replicas of the amphora types so far identified at Pattanam, made some 2000 years ago in different parts of the Mediterranean and Red Sea coasts.

The excavation reports of the eight seasons are on display, and the reports of 2013 and 2014 are available for sale.

A segment of the Exhibition is on contemporary art and Pattanam archaeology. The creative works of Vivan Sundaram, Riyas Komu, E.P. Unny, Bara Bhaskaran and Ajit Kumar G. invite other members of the artists' community to engage with the material findings at Pattanam.

Introductions to the Green Archaeology Project and the Pattanam research design look towards the future of the Pattanam research, and to developing Pattanam into a World Heritage site and knowledge centre in material culture studies.

The Creative Corner and the kids' workshops offer children a novel experience. The Exhibition souvenir 'Pattanam bowl' is a carry-home symbol of Pattanam's history, heritage and finds; it will give visitors a sense of 'contact' with the past.

The scope of the exhibition goes beyond the finds at Pattanam; after all, archaeology is all about universal human interactions, known and as yet unknown.

Professor P J Cherian

Curator, "Pattanam Unearthed: Histories, Cultures, Crossings",
National Museum Exhibition, New Delhi.



A NOTE FROM SAHAPEDIA



Sahapedia is delighted to partner with the National Museum and the Kerala Council for Historical Research (KCHR) to present the exhibition '*Unearthing Pattanam: Histories, Cultures, Crossings*'. The exhibition traces a fascinating story of retrieval: through the circumscribed site of excavations carried out in Pattanam, Kerala, from 2007 to 2013, it summons up the life and times of one of the most ancient port cities of the sub-continent. It also throws up evidence of vibrant activity from around 2000 BCE to 1500 CE in countries in different parts of the world, resulting in cosmopolitan trade exchanges and cultural interaction across the Indian Ocean rim, the Red Sea and the Mediterranean. The Kerala Council for Historical Research has done intensive excavations over eight seasons, in what is considered one of the most scientific and well-documented archeological feats in India, to unearth this invaluable information. It is indeed a pleasure for Sahapedia, an online encyclopedic resource on Indian cultures, heritage and the arts, to associate with KCHR through the hosting of such an exhibition, as also with the prestigious National Museum, Delhi, as part of its endeavours to forge connections and disseminate knowledge relating to the past.

Selecting a limited stock of 700 for display from a large and varied collection of more than a 100,000 artifacts was a challenging task. I congratulate the KCHR for putting together a significant selection, which exhibits a cross-section of both the tangible and the intangible aspects of a heritage that represents a wide geographic area covering many parts of the world. The exhibition gallery, populated with maps, sketches, audio/video documentation and, needless to say, actual artifacts, provides significant insights into the confluence of different cultures which made the ancient urban trade centre, Pattanam (Muziris?) an important destination on the world map for centuries, as the 5th century Roman map, the 'Tabula Peutingeriana' clearly establishes.

Sahapedia, with its mandate of providing free access to information and knowledge, envisages the creation of digital versions of the material, to make the knowledge more interactive and extensive. I am sure that collaborations with such important initiatives would strengthen the cause of greater access and use across different networks. We also hope that the exhibition would lead to a better understanding of maritime India, and the polities, literature and history of the south.

Dr. Sudha Gopalakrishnan

Executive Director, Sahapedia

Unearthing Pattanam

HISTORIES, CULTURES, CROSSINGS



'Onthumkavu Excavation Site', drawing by E P Unny

PATTANAM, AN ARCHAEOLOGICAL SITE ON THE KERALA COAST, has, since its discovery, excited curiosity regarding its nature and its identity. No Early Historic site had been identified on the Kerala coast, prior to the discovery of Pattanam. Since 2007, it has been excavated over 8 seasons by the Kerala Council for Historical Research (KCHR). As evidenced by the excavation finds and post excavation studies, Pattanam has a life history stretching over 3000 years. However, most of the significant finds are dated from the 3rd century BCE to the 5th century CE.

The nature of the excavated material has spurred archaeological research on Pattanam among scholars within the subcontinent, and outside. The discoveries made here indicate a trans-oceanic trade, contact with the western or the Greco-Roman world through ports on the Red Sea as well as the Arabian Sea coast. It was also connected to other parts of the Indian subcontinent and South East Asia.

The value of Pattanam lies in its finds and its location. The latter suggests that it may have been the ancient Muziris mentioned in Roman records or the Muciri of the Tamil texts. Muziris is one of the ports mentioned in the anonymous navigator's account, the *Periplus Maris Erythraei*, and identified to be on the Kerala coast. Why was Muziris located where it is? Quite likely this was a trading centre, carrying the spices of the southern Indian coast to the western world. There is also evidence for production of beads, cameos and other personal adornment items that suggest these were being made here for non-local markets.

Illustrating these long-distance contacts, the Exhibition brings to Delhi for the first time, some of the excavated finds, showcasing objects such as beads, Indian and non-Indian pottery sherds, metal objects, coins, gold ornament fragments and botanical remains.



The Exhibition also shows how Pattanam was excavated. The entire process of excavation has been illustrated showing the archaeological strata in the mound, how these strata were excavated and artefacts systematically recovered from them using the locus method, and then rigorously documented. Other techniques, like sieving the soil to recover tiny artefacts and botanical material, have also been shown.

A section of the Exhibition also displays the works of a few contemporary artists – works that reflect the artists’ impressions of Pattanam and its ancient heritage.

While Pattanam is a disturbed site due to intense population pressure, there is enough tantalizing evidence to suggest that the ancient settlement was urban, and focused on trade and production. The Exhibition is envisaged as a window into the life of an Early Historic trading station or emporium on the Kerala coast. This visual experience shows not only how the past continues to capture the imagination, but also how it shapes the present and the future.

Pattanam, an Early Historic emporium

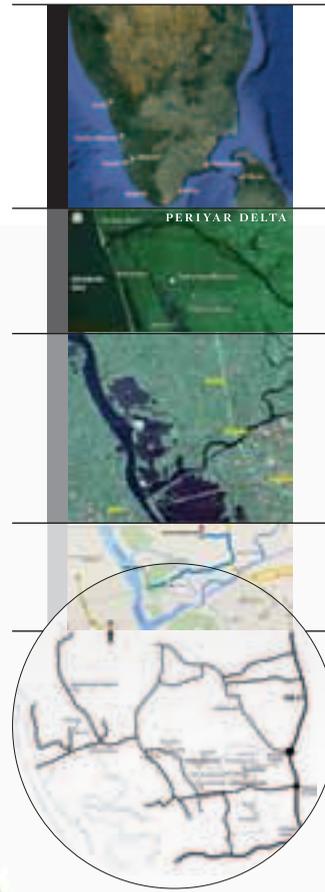
- THE FABLED MUZIRIS?

“Mouziris...is a flourishing [place] with ships from Ariake coming to it, and also Greeks. It stands on a river, and is 500 stades distant from Tundis by river and by sea, and 20 stades from the mouth of the river...”

[*The Periplus of the Erythraean Sea*, 1980, G.W.B. Huntingford, The Hakluyt Society, London]

The Pattanam archaeological site (N. Lat. 10°09.434'; E. Long. 76°12.587') is located in Vadakkekara village of Paravur Taluk, about 25 km north of Kochi in the Ernakulam District in Kerala, India. This is a coastal site located in the delta of the Periyar River and is now about 4 km from the Arabian Sea coast. The Paravur Todu, presently a distributory of the Periyar, flows about 1 km south of the site. The river Periyar flows 5 km north of Pattanam. The site is surrounded by palaeo (old) channels, a backwater, lagoons and streams. Though the site is surrounded by marshy areas with saline water, the Pattanam mound has sweet water suitable for drinking, which may be one of the reasons for the ancient settlement there.

The Pattanam mound is 3.32 m high above Mean Sea Level (MSL) and is spread out over about 70 hectares. However, being a densely populated village, the site is considerably disturbed. The Kerala Council for Historical Research (KCHR) presently owns about 5 acres of the site and is striving to develop it into a model archaeological site.



The eight seasons of excavations by the KCHR have unearthed a large volume and array of Indian and non-Indian artefacts belonging to different cultures and cultural periods. The chronology of the Pattanam site spans three millennia from circa 1000 BCE with evidence of habitation across the Iron Age, the Early Historic, the Medieval and the Modern cultural periods. The Early Historic period (3rd century BCE to 5th century CE) seems to be the most active phase of the site.

The word '*Pattinam*' has its origins in the Prakrit language and means a ferry, a port site or a commercial place. The location of Pattanam, as well as the material evidence unearthed here, point to the possibility that Pattanam could have been an integral part of the long lost, legendary port of Muciri Pattinam or Muziris, copiously mentioned in Indian and European classical sources. But its importance should not be confined to that alone. As the hub of the trans-oceanic network, Muziris seems to have integrated the peninsular Indian region (Tamilakam) with the larger urbanization process across the Indian Ocean littoral.



Pattanam over time

Pattanam is what archaeologists call a multi-cultural site, one that was occupied over several centuries and different historical periods. The roughly 4 m of occupation deposit and layers have been divided into five cultural periods, based on the archaeological material within the strata as well as dates acquired through scientific techniques.

The five periods are:

Iron Age (c. 1000 BCE - 500 BCE)

Iron Age-Early Historic transition (c. 500 BCE - 300 BCE)

Early Historic (c. 300 BCE - 500 CE)

Medieval (c. 500 CE - 1500 CE) and

Modern (c. 1500 CE onwards).

C. 1000 BCE
—
500 BCE

IRON AGE

Black and Red Ware pottery and iron objects usually mark this period at other sites. This is the same at Pattanam.

C. 500 BCE
—
300 BCE

IRON AGE—
EARLY HISTORIC
TRANSITION

A phase transitional between two is one where characteristics of both periods are seen together. At Pattanam, artefacts of both Iron Age and Early Historic periods are found.

C. 300 BCE
—
500 CE

EARLY
HISTORIC

The Early Historic is identified as when archaeologists begin finding written evidence. For Pattanam, this period is promising, as archaeological evidence for trade can be seen alongside references to trade in Greco-Roman and Tamil texts.

C. 500 CE
—
1500 BCE

MEDIEVAL

This period is marked by the appearance of typical roof tile called *koorayod*. Glazed ware and glass beads continue from the earlier period.

C. 1500 CE
ONWARDS

MODERN

New networks of trade are suggested by finds of typical Chinese ceramics and their European imitations.

The earliest period, over natural soil, is the **Iron Age**, from which levels megalithic pottery and iron objects were found.

The second period represents the **end of the Iron Age and the beginning of the Early Historic**, and was prior to the trade across the Arabian Sea. Materials such as Iron Age ceramics and iron objects, as well as a piece of Russet Coated Pottery and fragments of Turquoise Glazed Pottery, suggest the transitional nature of this period.

Most of the material related to trans-oceanic trade was found from layers belonging to the **Early Historic period**. Non-local ceramics such as amphorae, terra sigillata, Turquoise Glazed Pottery, torpedo and ovoid jar suggest these and their contents were brought into Pattanam. The Indian Rouletted Ware sherds in significant number mark the links with the Indian sub-continent trade network. Other material such as glass beads, Roman glass ware and stone cameo blanks indicate trade exchanges. In this period, Pattanam seems to have achieved an urban status as seen by burnt bricks, roof tiles, terracotta ring wells and other finds like early Chera copper and lead coins.



The **Medieval** period was marked by typical blue glazed pottery and the use of glass beads. However, architecturally, there seems to have been a reuse of bricks in this period rather than any substantial construction activity. There is very little evidence for trade activity between 1000 CE and 1500 CE.

Blue and white Chinese ceramics as well as their European imitations were found in levels of the last period, the **Modern**, suggesting the influence of new trade networks.

Digging on the Periyar

EXCAVATING PATTANAM'S PAST

Archaeological excavation is a process of discovery; it begins with questions and hypotheses regarding a site in its landscape.

A site is formed when people live in one place over time, constantly building, rebuilding, using and discarding material. It is these deposits, these everyday remains of the past that are built up gradually and that archaeologists excavate.

Excavation takes place from top downwards and thus is completely opposite to how the site was formed in the first place.

Excavation is also destruction as layers or features, once excavated, can never be recreated. Thus, every process during excavation has to be documented through writing, drawing and photography. The material that is collected in excavation is then classified, documented and, in many

cases, scientifically analyzed. Often, excavated artefacts are displayed in museums such as in this one. These material remains are instrumental in bringing to life aspects of peoples' pasts in a most tangible way.

Pattanam was systematically excavated over 8 field seasons. Here, you will see photographs of various stages from the excavations at Pattanam that produced the material that was exhibited.

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Pattanam was systematically excavated over 8 field seasons. Here, you will see photographs of various stages from the excavations at Pattanam that produced the material exhibited.

The collage illustrates the following stages of the excavation process:

- CLEARING THE SITE
- DIGGING
- TAKING MEASUREMENTS
- MARKING LOCI
- SIEVING FOR ARTEFACTS
- STORING DIAGNOSTIC SHERDS
- PHOTOGRAPHY
- COLLABORATION
- TROWELLING
- MARKING TOP PLANS
- DRYING BOTANICAL REMAINS
- NON-DIAGNOSTIC SHERDS
- RESEARCH
- LAYING OUT A TRENCH
- 3D MEASUREMENTS
- WASHING POTTERY
- DRYING POTSHERDS
- DISSEMINATING
- BRUSHING
- DOCUMENTING
- CHECKING SOIL COLOUR
- USING A MUNSELL CHART
- WET SIEVING FOR MICRO OBJECTS
- DRYING POTSHERDS
- DRAWING SECTIONS
- PUBLISHING
- COLLECTING & EXAMINING
- POTTERY ANALYSIS
- DRAWING POTTERY
- FINAL BRUSHING
- EXHIBITION

The Trench

PT 14 LI

The exhibition includes a to-scale replica of one of the trenches (PT 14 LI) dug during the 2014 excavation season. Located in the elevated area of the Pattanam mound, the trench had five cultural layers, representing the Modern, Medieval, Early Historic, Iron Age–Early Historic transition, and the Iron Age periods. The trench size was 5 x 4 meters, and it took two months to reach the natural soil at a depth of 317 cm.

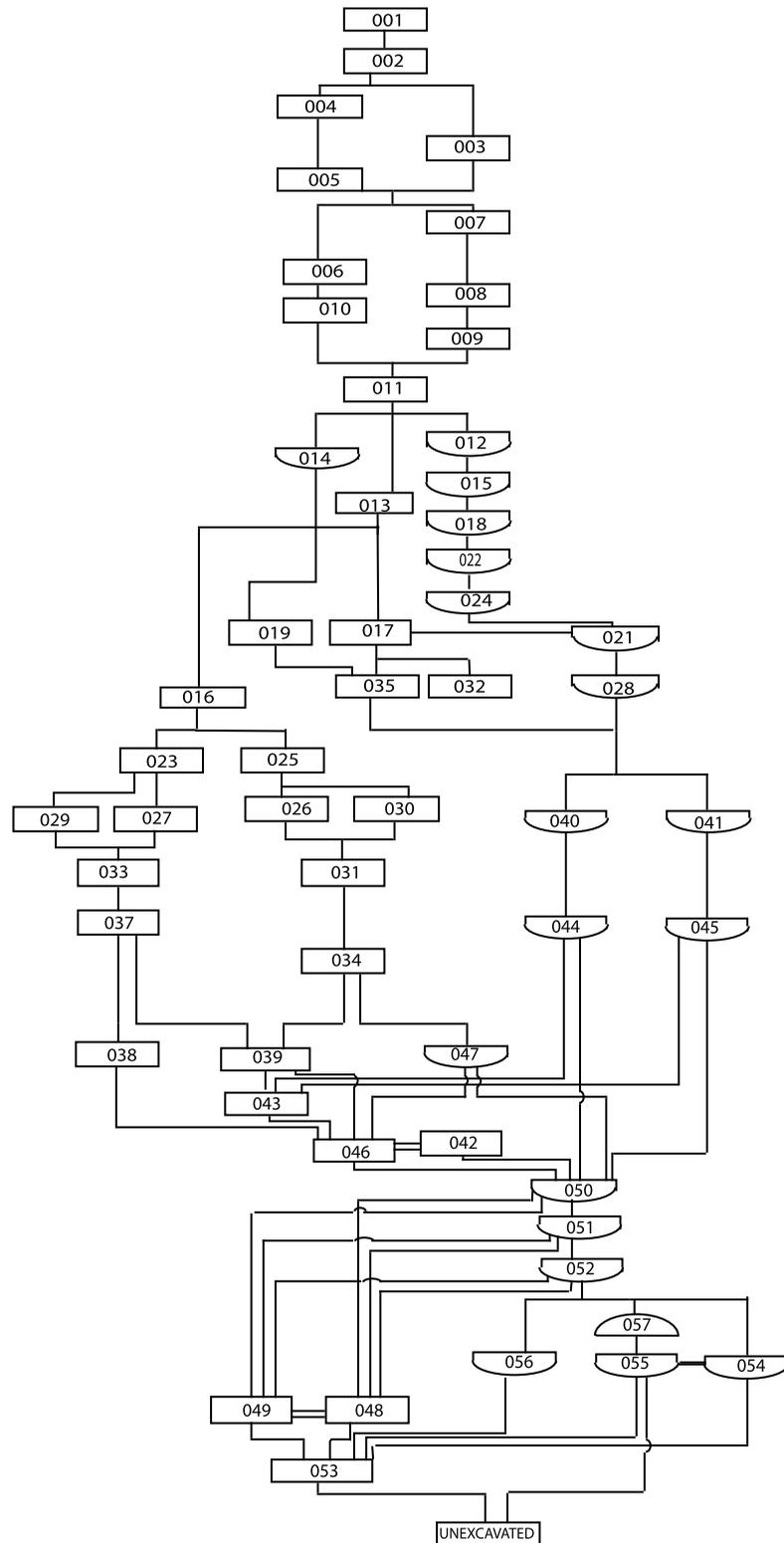
The excavation tools have been laid out on the floor of the trench. The Harris Matrix drawing represents the trench loci and their spatial relationships. The section drawing shows the layers in the eastern section of the trench.

KCHR has so far excavated 60 trenches at Pattanam, covering less than 1% of the 70 hectares of the Pattanam mound. Eight seasons of Pattanam excavations have unearthed 1,29,083 artifacts, 5,16,676 diagnostic potsherds (i.e. rims, necks, handles, bases etc.) and 4.5 million body sherds.

The features (immoveable elements) excavated include foundations of brick architecture, burnt clay floors, a wharf context (structural feature) with a 6 m canoe, ring wells, toilet features, storage jars, and a kiln context. The botanical remains include rice, black pepper, cardamom, frankincense, peat, bark, charcoal, leaves, roots, seeds, wood and pulses. The zoological remains include bone fragments and teeth. The geological remains include a range of local and non-local rocks and stones.

Understanding stratigraphy

THE HARRIS MATRIX

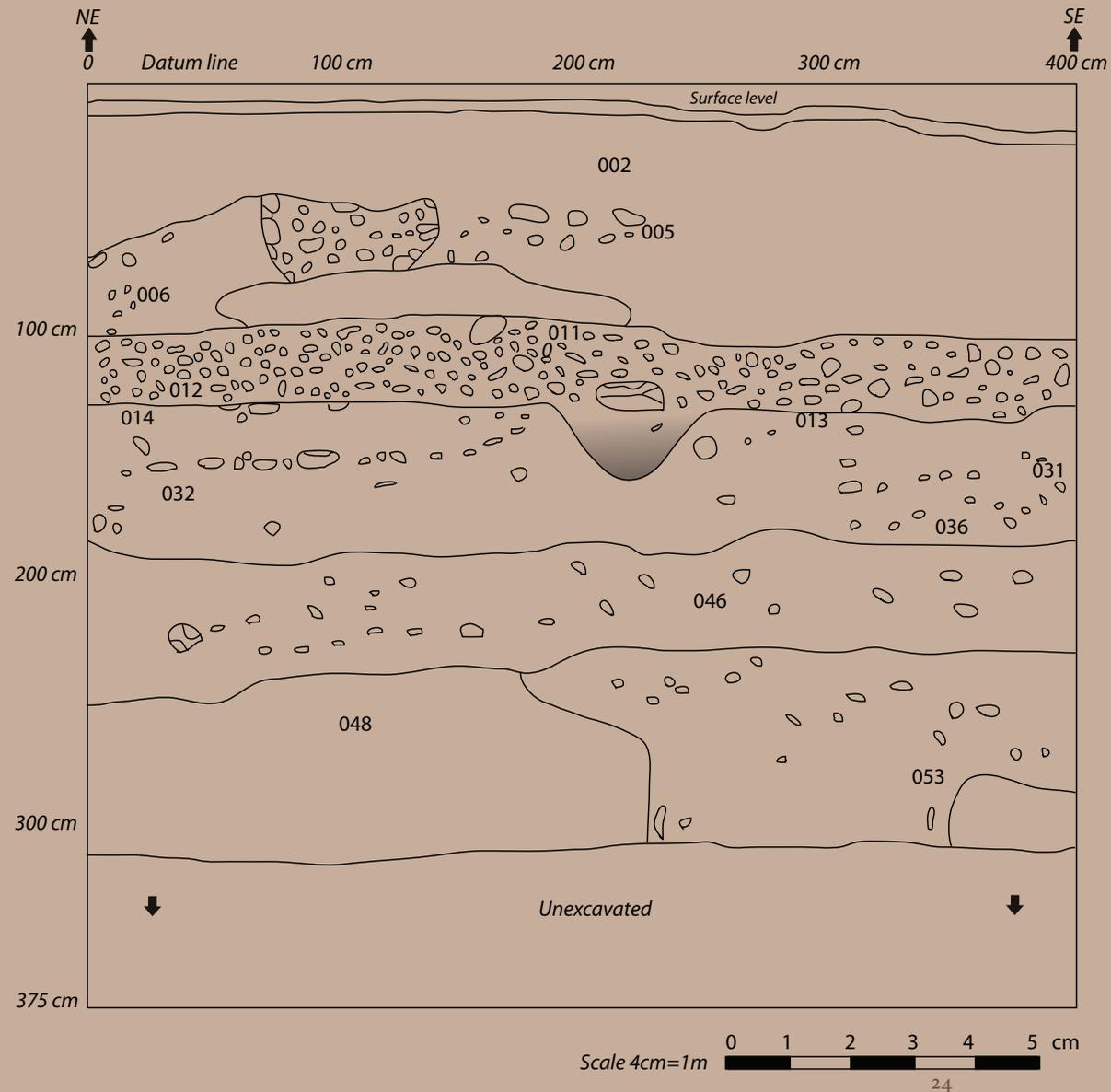


Designed by Edward Harris in 1973, this is a diagram that graphically depicts the spatial relationships among the excavated loci in a trench. In the conventional Harris Matrix, loci are represented as rectangular boxes joined by straight lines.

At Pattanam a modified version was employed. The figure here shows rectangular boxes connected by lines. Boxes with convex tops represent dumps and those with convex bottoms represent pits. Two parallel lines represent structures and features. The straight lines between loci and between loci and dumps and pits illustrate the relationships between them.

For example, in the Harris Matrix of Trench LI at Pattanam, locus 011 is underneath both loci 09 and 010 and over two separate pits 012 and 014. Apart from the pits, locus 013 also lies under locus 011.

Understanding stratigraphy



A SECTION DRAWING

Stratigraphy is the study of strata or layers in an archaeological site. What are these layers? In an archaeological site, the layers represent deposits built up over time due to natural processes like seasonal floods as well as human activities like production, use and discard of objects and abandonment of structures.

The placement of these layers one over another indicates their relative age. The layer or stratum at the lowest level is older than all the layers above it. In that sequence, the most recent layer is the one at the top.

This figure illustrates the stratigraphy of the eastern face of Trench LI at Pattanam. It shows various layers of deposits that are differentiated by their composition, colour and content. Thus, for example, above the unexcavated portion at the bottom can be seen a sandy layer. Above this, is a layer of sand mixed with clay and over it is a layer of clay mixed with sand.

The numbers marked within the layers are various excavated loci. For example, in the sandy layer at 3 m are loci 048 and 053. The sand mixed with clay layer over this has locus 046 in it. Right at the top there is a layer of humus or top soil within which there is locus 002.

Trade links of Pattanam



TRADE ROUTES AND PORTS LINKED TO PATTANAM



Pattanam, as presently known, had connections with the Mediterranean, the Red Sea and the Indian Ocean littorals (from East Africa to the South China region) and with other parts of the Indian subcontinent during various phases in its history spanning three millennia. The uniqueness of Pattanam is that it had contacts with the outside world before the Roman phase.

The frankincense crumbs, Turquoise Glazed Pottery, Torpedo and Ovoid jar fragments from the South Arabian and Mesopotamian regions point to the Pre-Roman, Roman and Post Roman links of Pattanam, from 300 BCE - 1000 CE.

Ample evidence of Pattanam's Mediterranean connections, during the period 100 BCE - 500 CE, is available at the site in the form of sherds of amphorae, terra sigillata, intaglios, cameo blanks, Roman glass fragments, Roman gaming counters etc.

The Blue and White ceramics and other Chinese sherds point to later trade links of Pattanam with the eastern Indian Ocean regions, from 1500 - 1900 CE.

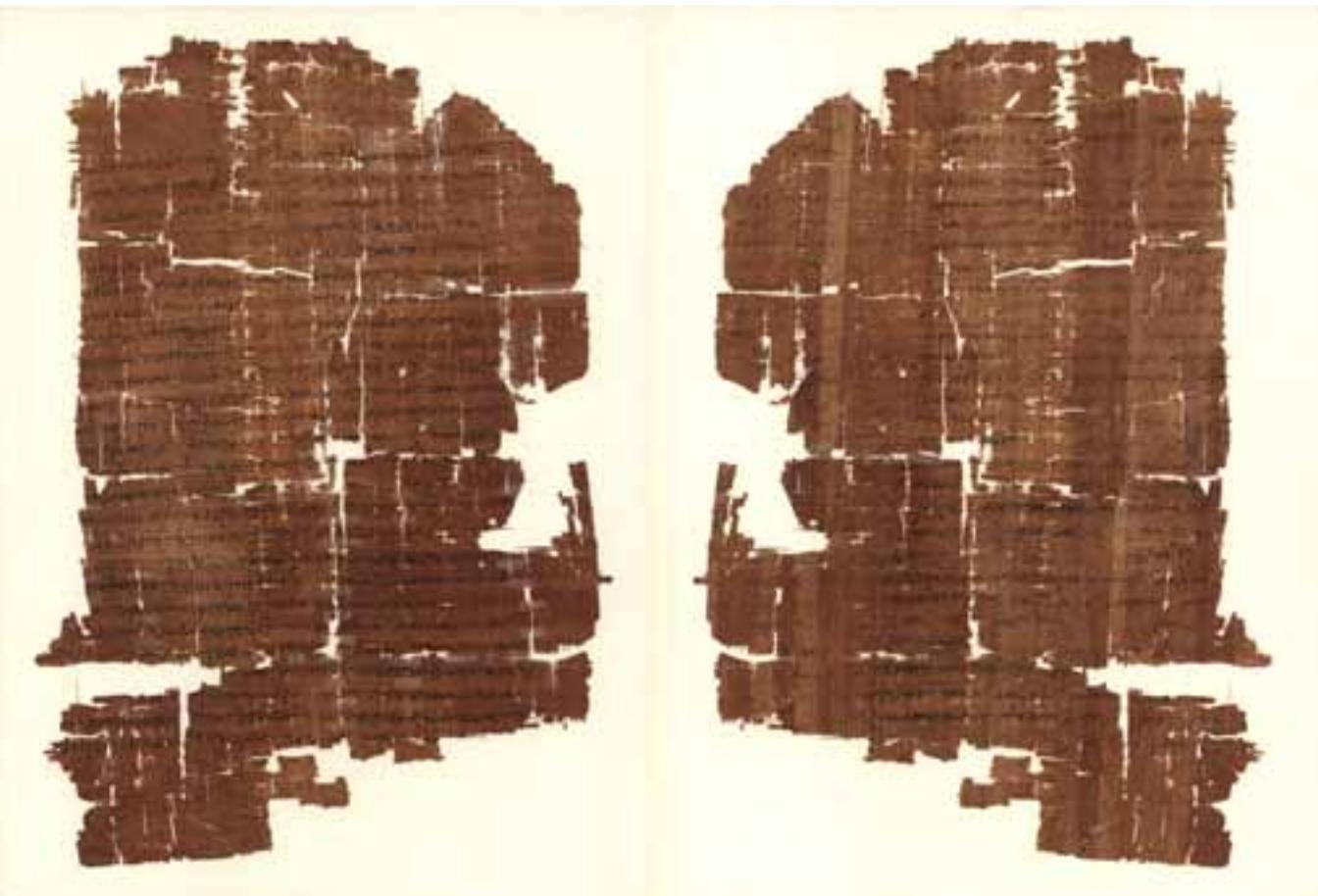
Thus, gemstones, glass beads, semi-precious stone beads, inlays, intaglios, cameo-blanks, gold jewellery, copper coins, spices and pottery, vouch for Pattanam's trade links with the Indian subcontinent and beyond, for much of its history (1000 BCE to CE 2000).

Some of these objects could have been manufactured at Pattanam or the settlement could have acted as a ware house or a transit point for other items, such as spices and other natural resources from the hinterland. All of these can be understood further only after more research on the evidence, and comparative studies with contemporary port sites.

Guangzhou and Quanzhou (South China), Khao Sam Kaeo, (Upper Thai-Malay Peninsula) Tamralipti, Arikamedu, (Veeram Pattinam, Pondicherry) Korkai and Alagankulam (Tamil Nadu), Tissamaharama and Manthai (Sri Lanka), Barygaza (Bharuch, Gujarat), Ormara (Pakistan), Teredon (Basra? Iraq), Gerrha (Al Ahsa, Saudi Arabia), Khor Rori (Sumhuram, Oman), Cana (Al Mukalla, Yemen), Socotra island (Yemen), Muza (Yemen), Berenike (Berenice, Egypt), Myos Hormos (Quseir al- Qadim, Egypt), Aqaba (Aila, Jordan), Coptos (Qift, Egypt), Alexandria (Egypt) and Cilicia (Turkey) are some of the port sites identified as contemporary to Pattanam during the Historic Period, signifying its potential trade links with them.

Naturalis Historia (VI, 26) by Gaius Plinius Secundus or Pliny the Elder
(published in c. 77 CE)

“Thence from Ocelis with the wind Hippalus they sail in forty days to Muziris the first emporium of India, not to be sought on account of the pirates in the neighbourhood.”



THE MUZIRIS PAPYRUS

Muziris Papyrus (dated to 2nd century CE), an agreement signed between two men, one whose cargo originated at Muziris on the Malabar Coast bound for Alexandria in Egypt

I will give to your camel driver 170 talents, 50 drachmas, for use of the road to Koptos, and

I will convey [your goods] inland through the desert under guard and under security to the public warehouses for receiving revenues at Koptos, and

I will place [them] under your ownership and seal, or of your representatives or of whoever of them is present, until loading aboard at the river, and

I will load [them] aboard at a required time on a seaworthy boat on the river, and

I will convey [them] downstream to the warehouse that receives the duty of one-fourth at Alexandria, and I will similarly place [them] under the ownership of you or your representatives.

With regard to their being – if, on the occurrence of the date for repayment specified in the loan agreements at Muziris, I do not then rightfully pay off the aforementioned loan in my name – there then being to you or your agents or representatives the choice and full power, at your discretion, to carry out an execution without assignment by auction, you will possess and own the aforementioned security and pay the duty of one-fourth and the remaining three-fourths you will transfer to where you wish and sell and hypothecate, etc.

STAMPED POTSDHERD

Pottery produced in the Roman region was often stamped with the name of the workshop. One such stamped sherd is exhibited here.



Writing

The physical evidence of writing at Pattanam is in the form of a few inscribed and stamped potsherds.



Possibly an iron writing implement or stylus



TAMIL-BRAHMI SCRIPT ON SHERD

There are 5 letters in this Tamil-Brahmi inscription scratched on a potsherd. The 4th and 5th letters are not clear and have been understood as 'te' and 'kei' respectively.

The word has been read as '*amana*' and the link may be the word '*amanen*' meaning a senior Jain monk.

The style of the letters allows the script to be dated to the 5th century CE.

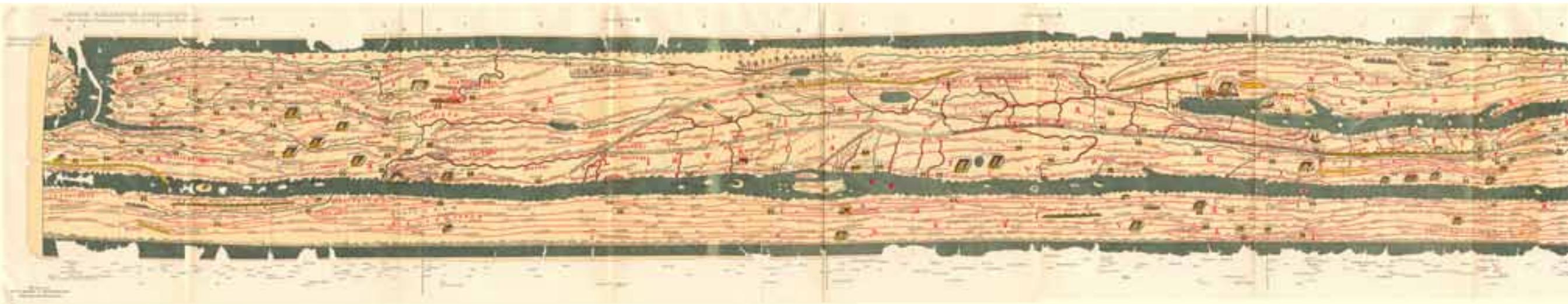
The Tabula Peutingeriana

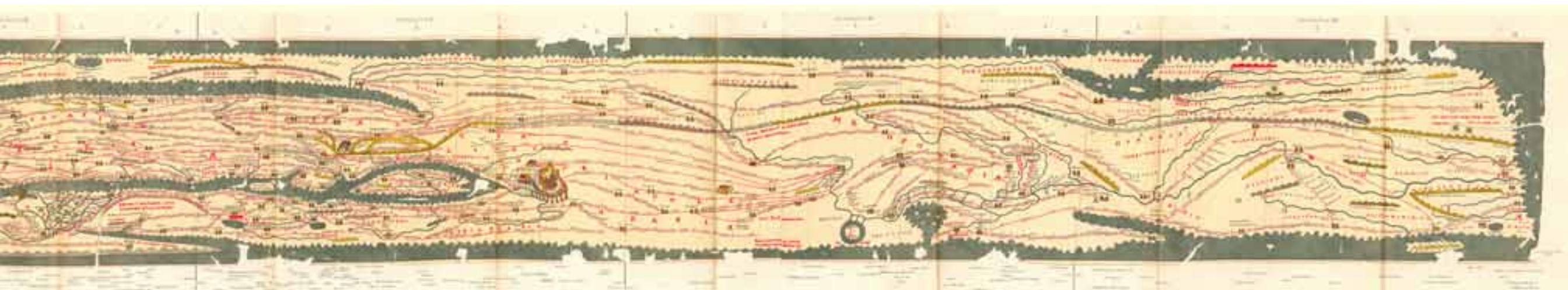
AN ANCIENT MAP OF THE WORLD

The Tabula Peutingeriana is an old map of the world depicting ancient towns, seas, rivers, forests, mountain ranges and Roman roads. It belonged to the private collection of Konrad Peutinger (1465-1547) a German antiquarian, and derives the name from him.

The map covers the area of the provinces under the Roman rule; Rome, Antioch and Constantinople are marked on it with special importance. The word 'tabula' refers to a piece of parchment stretched onto a frame or a wooden tablet. The map on parchment, thus, came to be called a *tabula* rather than a *charta* (chart) or an *itinerarium* (itinerary). It is presently in the Austrian National Library at Vienna.

The Tabula Peutingeriana is a scroll dated to the 12th century CE, but is a copy of the Roman map that can be dated to the first half of the 5th century CE. The most remarkable feature of the map is its odd size. In total, the eleven sheets of parchment are 680 cm in length and just over 33 cm in width. It is too compressed to be a real rendering of the landscape then.





On the extreme right side of the map you can see Muziris, and a nearby lake, Lucus Muziris. The Temple of Augustus can also be seen close to it. A mountain range, probably the Western Ghats, is mentioned in Latin as '*Where Elephants are Born*'. This is significant because the Chera coins excavated at Pattanam carry on their obverse, the symbol of elephants. Curiously, the elephant continues to be the state symbol of Kerala even today.

Also, the island marked on the map as Taprobane, is Sri Lanka.



Moving Goods and Materials at Muziris

EXPORTS

Black pepper
Malabathron (cinnamon-like aromatic plant)
Gangetic Nard (aromatic oil derived from a plant <i>Nardostachys jatamansi</i>)
Fine-quality pearl
Chinese cloth (silk)
Transparent gems
Diamonds
Sapphires
Tortoise shell
Ivory tusks
Trimnings of ivory

(Source: *Periplus Maris Erythraei*; Muziris Papyrus)

IMPORTS

Roman gold
Peridot (a green coloured gem)
Undecorated cloth
Multi-coloured textiles
Sulphide of antimony
Coral
Raw glass
Copper
Tin
Lead
Wine
Realgar (a ruby red-coloured arsenic sulphide mineral)
Orpiment (an orange-coloured arsenic sulphide mineral)
Grain



MATERIAL CULTURE

REFLECTING LONG-DISTANCE TRADE



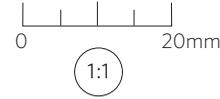
THE TEXTS TELL US ABOUT THE KINDS OF GOODS BEING IMPORTED INTO AND EXPORTED OUT OF MUZIRIS. THE MATERIAL EVIDENCE UNEARTHED AT PATTANAM, ON THE OTHER HAND, GIVES US DIRECT INFORMATION OF TRADE THROUGH MATERIALS THAT ARE CONSIDERED NON-LOCAL OR NON-INDIAN.

Non-Indian Pottery

Non-Indian pottery at Pattanam refers to all the pottery types whose origin is outside the Indian sub-continent.

Among these are sherds of amphorae and Terra Sigillata which belong to the Mediterranean region; Turquoise Glazed Pottery (TGP) and torpedo jar pieces belonging to the West Asian, Arabian and Mesopotamian regions; and Chinese ceramic sherds.





Terra Sigillata

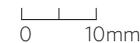


This is a bright red ware that came in from both the Eastern and Western Mediterranean. Most of the sherds from Pattanam are from Italy, of a type earlier known as Arretine ware, since it was produced in the pottery workshops of Arretium in Tuscany from the 1st century BCE to the 2nd century CE. This fine-quality tableware has a smooth, glossy surface and may be stamped with the name of the potter. Pattanam has produced two stamped Terra Sigillata sherds.

Sigillata are mainly of two types: shallow platters and small drinking cups.

The Arikamedu Terra Sigillata sherds are dated between the late 1st century BCE and the early and the mid-1st century CE.

Besides Arikamedu and Alagankulam, Pattanam is the third archaeological site in India to report Terra Sigillata.





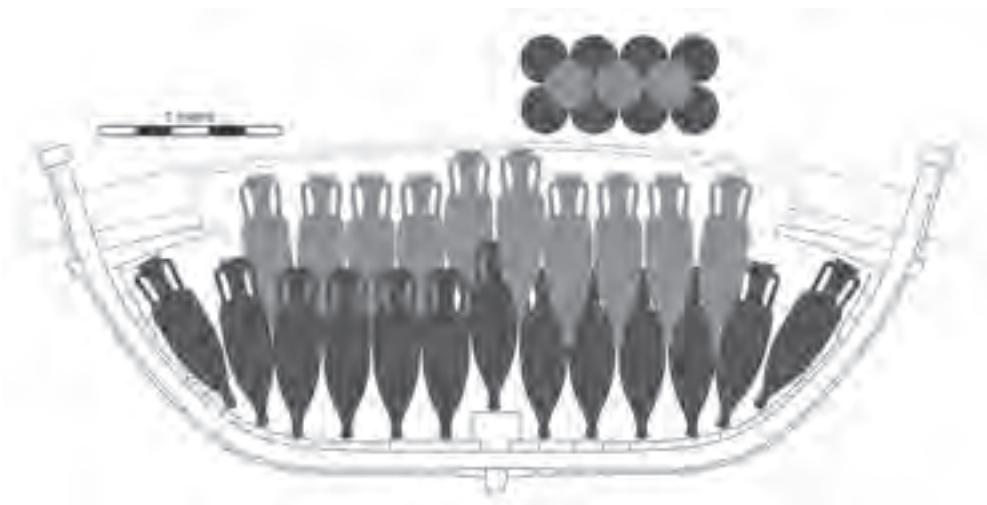
0 10cm

Amphorae

Amphorae are large storage jars that were used to transport products such as wine, olive oil and fish products throughout the Roman Empire. All three of these foodstuffs were vital to the Roman way of life for culinary reasons, as well as serving medicinal and religious purposes. The amphorae found in India, and their contents, are likely to have been for resident merchants and traders from the West, as well as for local elites.

Amphorae were manufactured in every Roman province. Although specific shapes may be associated with specific geographical areas, pottery was frequently imitated, particularly those shapes that were associated with high quality products. As a result, shape alone cannot be used to distinguish a source area; other methods are needed.

The scientific technique of petrographic analysis of the clay or "fabric" is a powerful tool. For this, a small sample of the pot is mounted on a glass microscope slide and evenly ground to 30 microns (about the thickness of a hair) so that it becomes transparent. When the thin section is examined with a polarising light microscope, the different rocks and minerals in the clay can be accurately identified. This allows different clays to be distinguished from each other and in some cases, in comparison with the geologic deposits, for source areas to be suggested.



Amphora stowage in a ship's hold, a reconstruction. Drawing courtesy Julian Whitewright

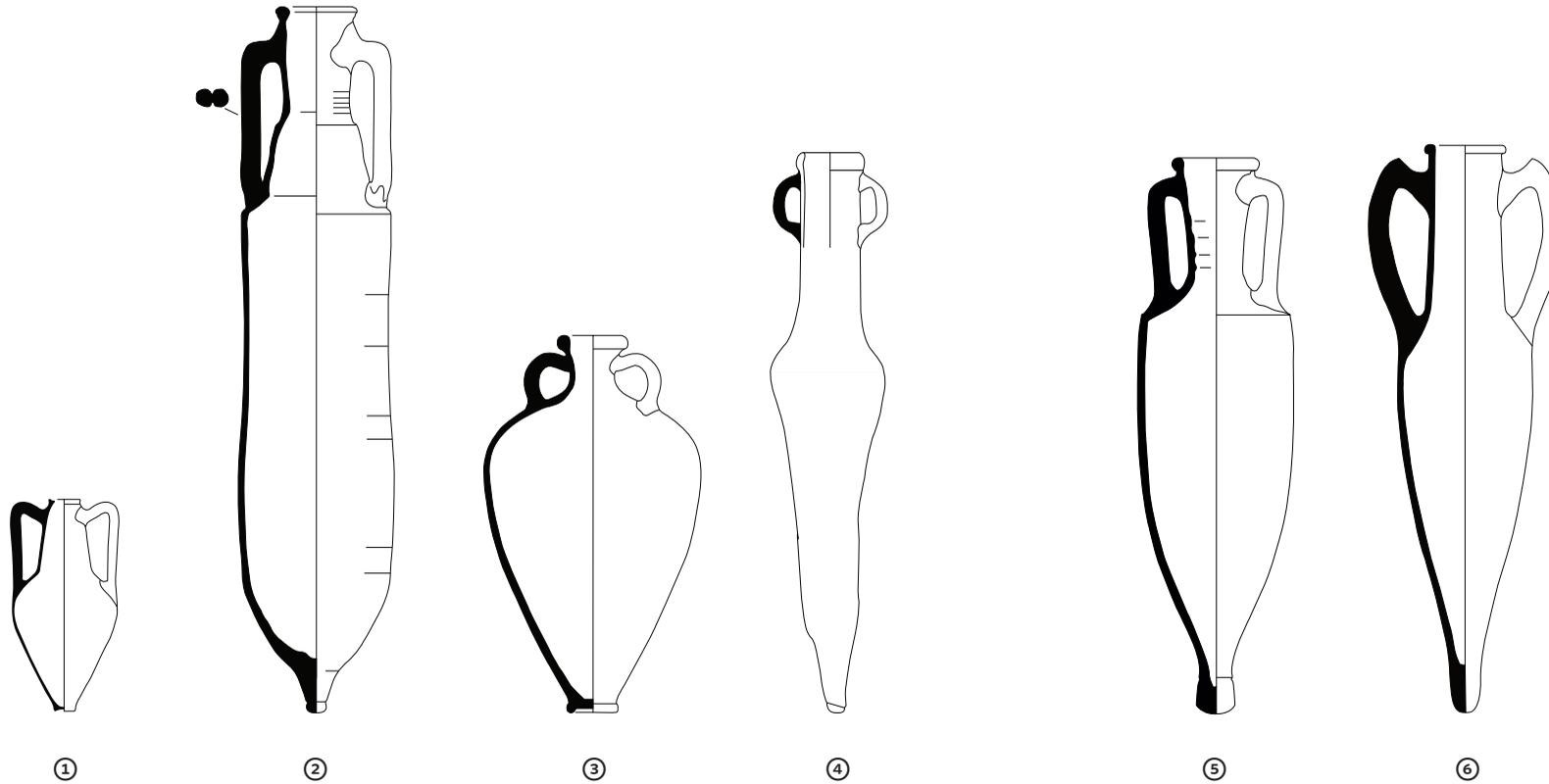


On display is a cluster of 53 amphora sherds, found in a small area within a single locus. It is possible they are part of the same vessel.

Also exhibited are 11 replicas of the main amphora types identified at Pattanam. These were painstakingly recreated from dimension drawings by Tulsiram Prajapati.



Most amphorae sherds found at Pattanam were containers for transporting wine. Stylistic and scientific studies show that they originated in six main areas around the Mediterranean: Kos and Rhodes (Greek Islands) Campania and adjacent areas (Southern Italy including Bay of Naples), Cilicia (Eastern Turkey and Syria), Hispania Tarraconensis and Hispania Baetica (Spain), Gallia (France), and Aegyptus (Egypt).



① **Cilician amphora**
Turkey/North-West Syria
Container for wine

② **Koan amphora**
Greek Island of Kos
Container for wine

③ **Gaulish amphora**
Southern France
Container for wine

④ **Egyptian amphora**
Nile Valley of Egypt
In Egypt used to transport wine and oil; vessels exported outside Egypt are likely to have contained wine

⑤ **Campanian amphora**
Southern Italy
Container for wine (similar shapes were produced in most Roman provinces, but their shape may vary slightly as does their date of production). This form of amphora made near Alexandria is the next most common and these date to the 1st to 2nd centuries CE

⑥ **Aqaba (Aiela) amphora**
Jordan/Israel Red Sea Coast
Fish products or dates (?) wine

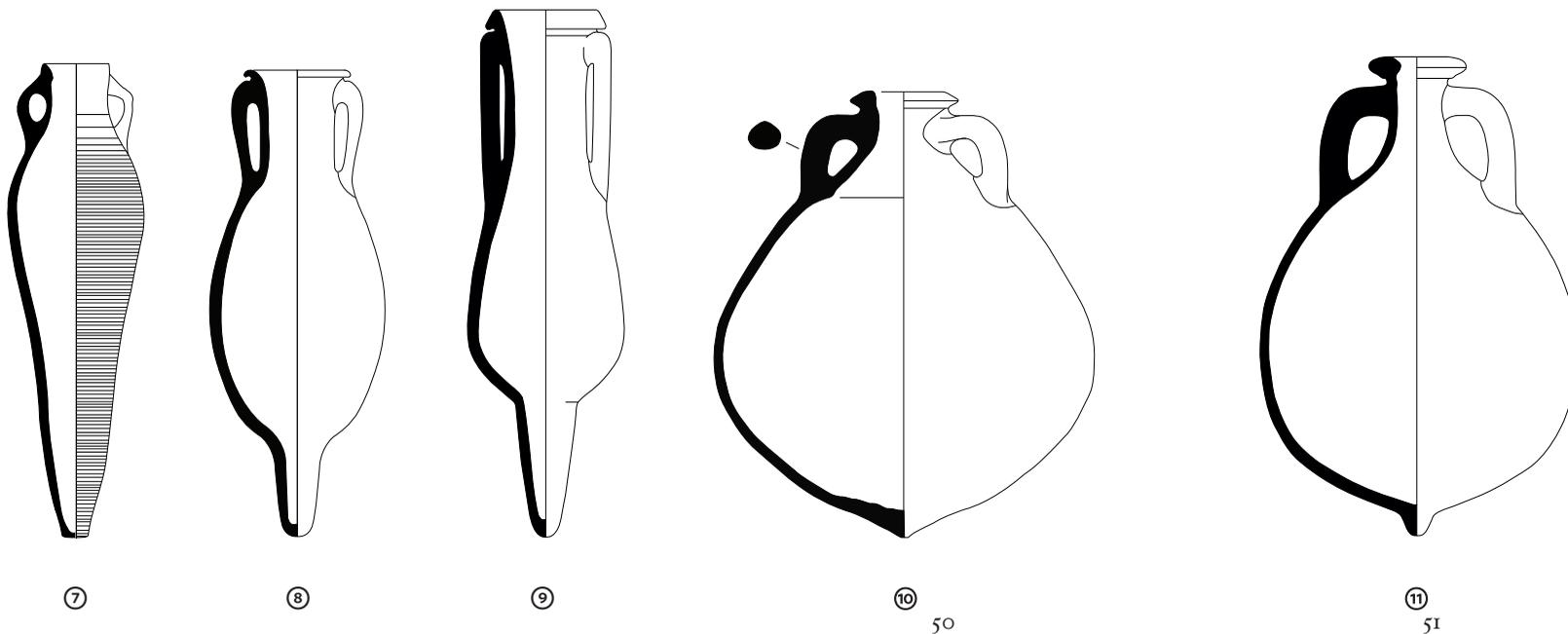
⑦ **Southern Spanish amphora**
Garum and other fish products
Southern Spain

⑧ **Southern Spanish amphora**
Garum and other fish products
Southern Spain

⑨ **Baetican amphorae**
Olive oil
Southern Spain

⑩ **Baetican amphorae**
Olive oil
Southern Spain

⑪ **Late Rhodian amphora**
Greek Island of Rhodes
Container for wine



7

8

9

10

11

Torpedo Jars



The torpedo jars are of Mesopotamian origin and have a body resembling a torpedo. They look like amphorae without handles and probably had similar uses.

The majority of the torpedo jar sherds found in Pattanam have an off-white powdery fabric and a black coating of bitumen on the inner surface. The bitumen coating makes them leak-proof, thus making them safe to store and transport liquids. Though the Pattanam torpedo jars are yet to be dated precisely, they could be attributed to the Parthian (3rd century BCE to 3rd century CE) and Sassanid (3rd century CE to 8th century CE) periods.

Most of the torpedo jar sherds have been found from the Early Historic layers and interestingly some were from the Iron Age-Early Historic transition layers, indicating that the trade with West Asian, South Arabian and Mesopotamian regions had preceded that with the Mediterranean by at least two to three centuries.



South Arabian Ovoid Jars

This type of earthenware is common in South Arabia, especially in Hadramawt from the 3rd century BCE onwards.

The main features are the reverted rim, the ovoid shape and the ring base. The fabric is always characterized by the presence of straw temper and some grits; the vessels are handmade; the surface is smoothed, often wet smoothed. The color varies from light red to yellowish and greenish.

The presence of a stopper on the rim (attested in South Arabia) and the narrow mouth of these jars suggest the transportation of liquids. The content of these jars could have been Arabian wine, famous in antiquity, according to ancient sources.

These sherds are from the Early Historic layers at Pattanam.



Turquoise Glazed Pottery (TGP)

These blue and green glazed sherds belong to a broad group of Mesopotamian ceramic vessels from Babylonian times which continued into the Islamic period.

It is generally believed that TGP was principally manufactured in Southern Iraq, possibly in the vicinity of Basra, although it is possible that other production centres also existed.

TGP is a class of alkaline-glazed earthenware that has a light beige fabric and a glaze that can be green, yellow, white or blue. Glaze is a type of slip applied to pottery which when fired at high temperatures, produces an impermeable and glassy surface.

The pottery is in the form of bowls, plates or jars of varying sizes.

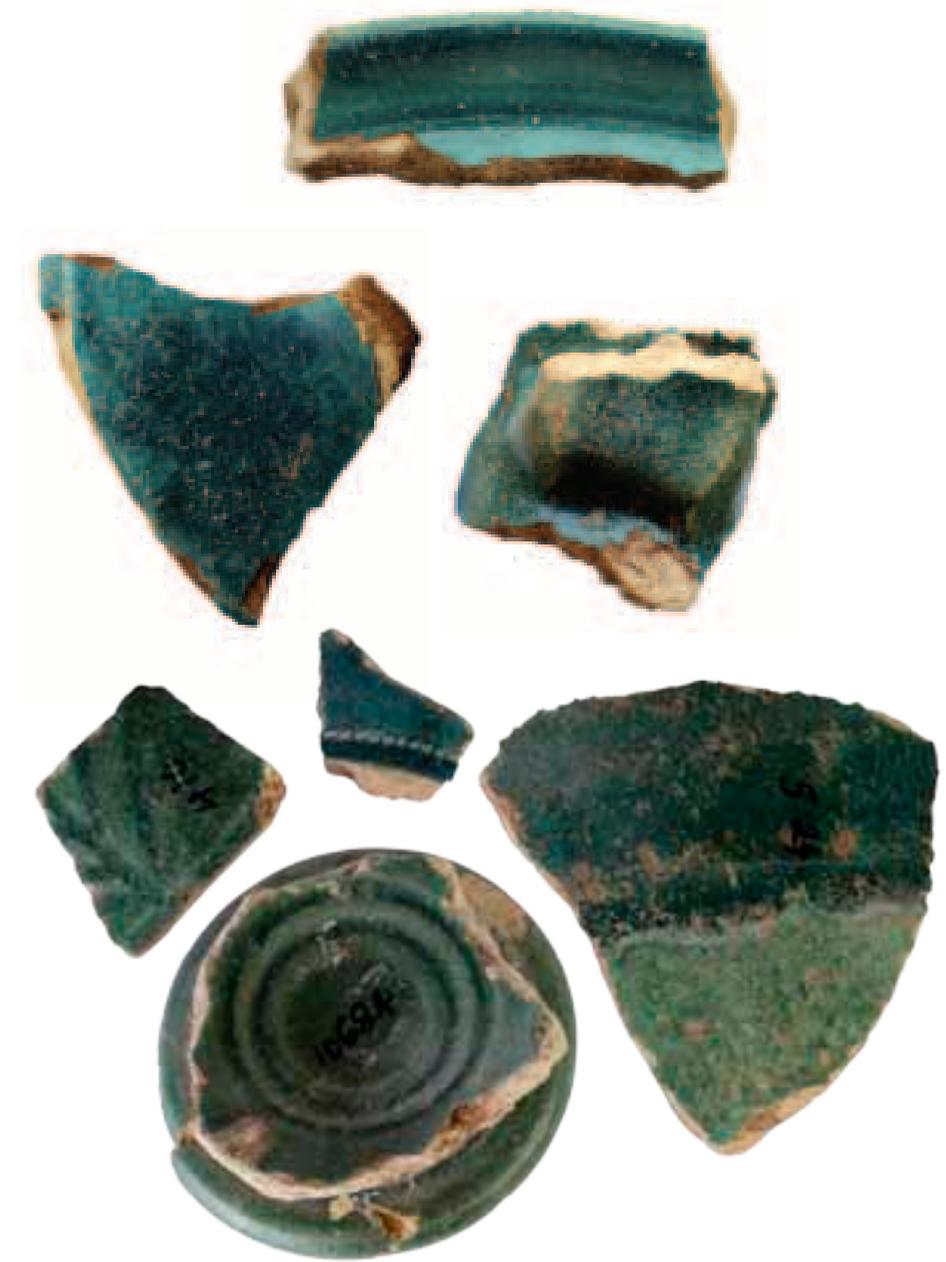
At Pattanam, TGP sherds are found in the Early Historic layers and, as in the case of the torpedo jars, a few are found in the transition layers as well. The Pattanam TGP sherds are proposed as belonging to the 3rd century BCE and 8th century CE.



x2



x2



1:1

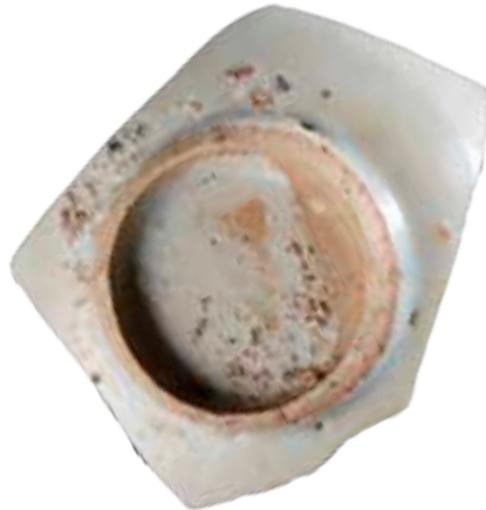


Chinese Porcelain

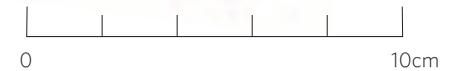


The oldest Chinese dictionaries define porcelain as "fine, compact pottery". The Chinese porcelain of types of blue and white, white glaze and brown glaze were mostly produced from DeHua, DaLong or ErLong kilns in Fujian Province, dating back to the 16th century.

These sherds help to fix the chronology of the site and may be relics from the Portuguese or Dutch colonies.



58



59

UNIDENTIFIED DISTINCT POTTERY

There are some distinct types of pottery whose provenance and nature are uncertain. All such pottery with distinct fabric and morphology, yet not belonging to the well recognised categories, has been termed Unidentified Distinct Pottery by the Pattanam researchers.



1:1

60



Pattanam Ware

Pattanam ware is one major type of distinct yet unidentified pottery. These sherds are pink, with white inclusions. Most of the sherds seem to belong to thick storage vessels, with a few from thinner vessels as well.

This type with unknown provenance was excavated probably for the first time at Pattanam. This group has been temporarily named Pattanam ware but without any claim that they belong to the Pattanam region.

More recently, similar sherds have been found from the site of Khor Rori in Oman.



1:2

61

GLASS AT PATTANAM

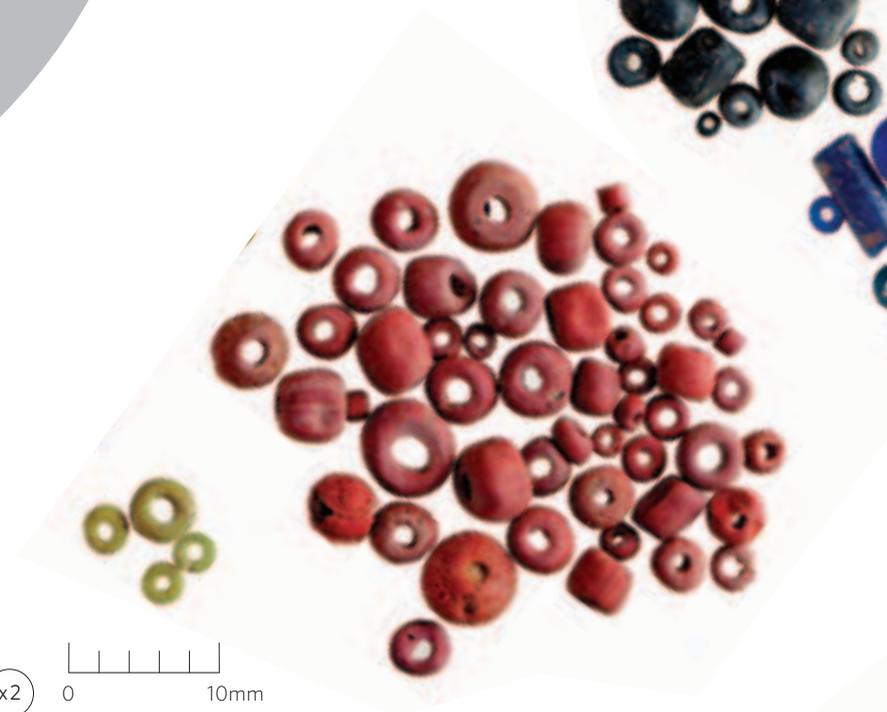
Beads, tableware fragments, occasional bangles, and gaming counters of glass have been found at Pattanam. Many of the varieties of glass artefacts are associated with trans-oceanic trade.



Glass bangle fragments



Assorted beads



Indo-Pacific trade beads



Indo-Pacific Trade Beads

These glass beads are monochrome, undecorated and usually tiny, less than 6 mm in diameter. The colours are green, blue, red or orange/red, black and yellow.

Indo-Pacific beads belong to a category of drawn beads, referring to the method of their manufacture. These beads were sliced from heated, slim and hollow tubes of drawn or pulled glass.

They are called Indo-Pacific beads because they have been found from a large number of sites stretching from Africa to the countries in the Pacific Ocean.

The Pattanam beads are similar to those from Arikamedu and Kodumanal in peninsular India, Mantai in Sri Lanka and Berenike on the Red Sea.

Glass bead waster



1:1

There is a strong likelihood that glass beads were not made at Pattanam but reached there from Arikamedu on the east coast. Arikamedu shows ample evidence for glass bead production.

Most of the glass beads are found from the Early Historic layers though through erosion, these reach the surface. The term *muthuparambu* (plots that yield beads) is commonly used in the Pattanam village to denote the beads that dot the surface.

In contrast, glass bangles are rarer. These are made from translucent and opaque glass.



x3

Roman Luxury Tableware

Pieces of curved glass with distinctive ribbed designs have been identified as Roman ribbed or pillared bowls.

These are monochrome, being either dark blue or green, though other colours such as yellow and light brown can be seen here.

Such bowl pieces are found in large numbers at the Red Sea port of Berenike.

Ribbed or pillared bowls were produced in the Mediterranean region in the late Republic or early Augustan period and largely stopped being produced by the late 1st century CE, though some continued in use till the early 2nd century CE.



x2



1:1



Painted Glass

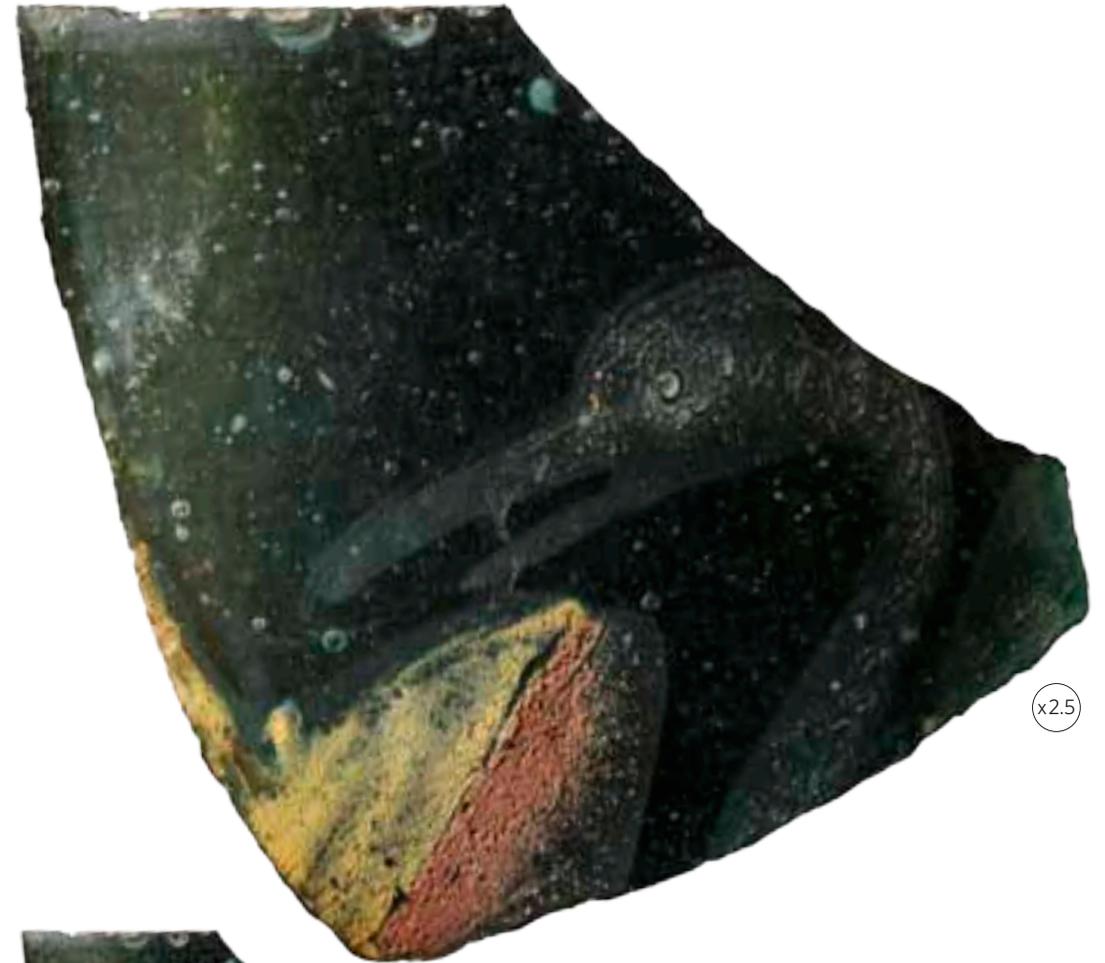
A polychrome or multi-coloured variety of Roman tableware was produced in the Mediterranean region in the early centuries CE.

These are decorated with designs. A piece displayed here shows a long-necked and big beaked bird, possibly a water bird.

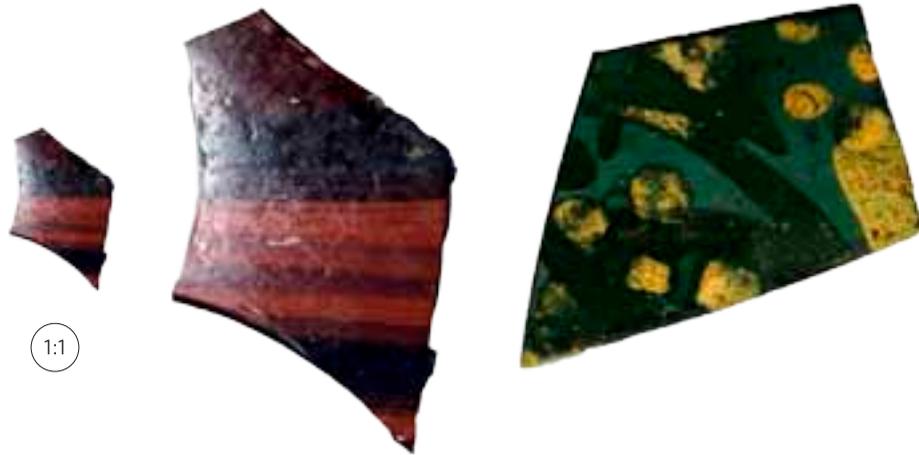
Another common design is one with rows of double yellow/gold spirals.



x2



x2.5



1:1



x2.5



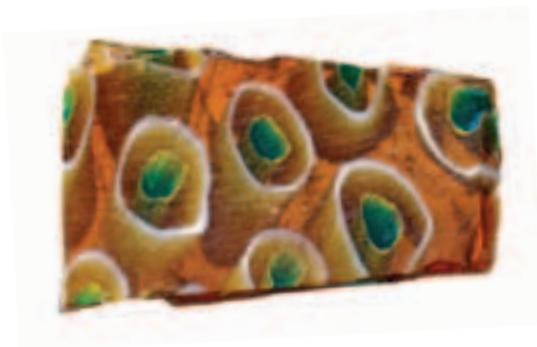
1:1

Mosaic Glass

This is another category of imported glass, where the effect is of one kind of glass material and design inserted into a glass body. All the fragments are of pieces of Roman tableware. All these were found from the Early Historic layers at Pattanam. These suggest the trade networks with the Mediterranean world.



1:1

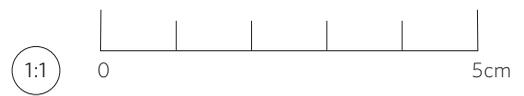


Roman Board Game Counters

Round monochrome glass objects are identified as gaming counters, pieces to be moved on a board game. These sometimes have both sides flattened, or one side flat and the other convex. Pliny called them '*oculi*' (meaning eyeballs) because of their rounded shape.



x3



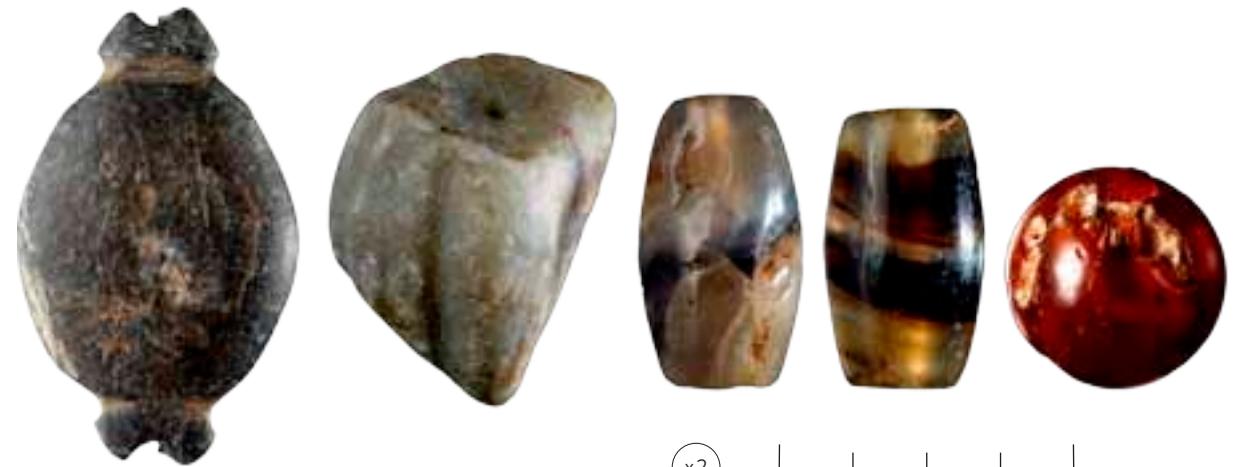
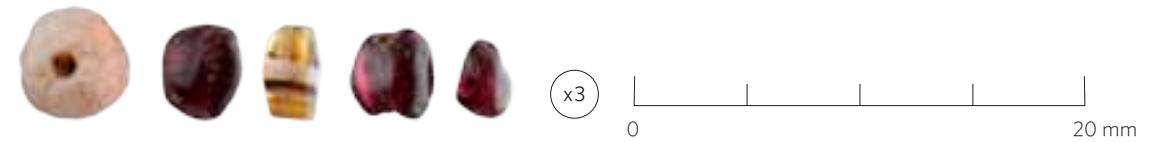
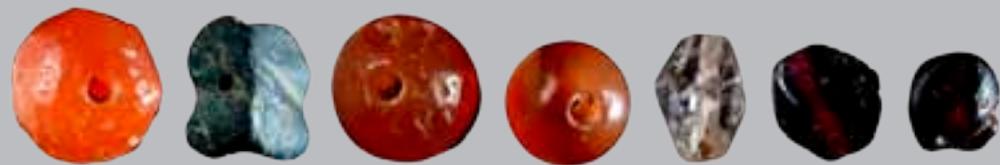
GEMS OF STONE



Pattanam during the rainy season is a striking sight. Gems made of multi-coloured stones erode their way up to the surface and lie scattered across the mound.

These beads are made of several varieties of semi-precious stones such as agate, amethyst, beryl, quartz, quartz crystal, carnelian, chert, chalcedony, garnet, onyx and topaz and are cut into various shapes.

A special type of decorated bead is the one called the 'etched bead'. This is made by painting a design in gum on an agate or a carnelian bead and firing it so that the design gets etched onto the surface of the bead.



Gems

Stone bead making was a craft practiced at Pattanam. Archaeologists know this because objects at various stages of production have been found. All stages of the bead maker's craft have been illustrated here.

To make stone beads, raw materials are required. Nodules or blocks of various raw materials are found: agate, amethyst, beryl, chalcedony, carnelian, quartz crystal, garnet and quartz. Some of these, such as beryl and quartz, are found in interior areas such as the Kongu country. Others seem to have been brought from areas further away.

The stages of production involve roughing out a bead shape, finely flaking it, grinding it into final shape, polishing it to give it luster, and then perforating it. Sometimes, a bead was perforated before polishing. Finding a bead at any of these stages suggests it was left unfinished.

Lumps of raw materials, roughouts, tiny chips and flakes of semi-precious stones, fully formed beads left unperforated, all suggest that beads were made at Pattanam.



1:1



1:1 0 20mm

0 20mm

Cameos

A cameo is a piece of jewellery very often used in signet rings or as earrings. Sometimes, large cameos were not used as ornaments but as valuable objects of art to be admired.

Cameos refer to round or oval objects which have carved designs in raised relief on their surfaces. Stones that have multiple hues such as banded agate or carnelian were preferred.

The Romans preferred oval cameos. Interestingly, several of the unfinished cameos or 'cameo blanks' found at Pattanam, are of oval shape.

The cameo blanks could have been exported from Pattanam to the Roman world to be carved and used as cameos.



1:1



x3

Stone Inlays

Inlaying is a technique of decoration where material of one colour is inserted into a material of contrasting colour, for example, bone inlays in wood. Pieces of inlay were used to form designs such as floral motifs and figures of animals and humans.

At Pattanam, inlay pieces made of agate, amethyst, beryl, carnelian, garnet and onyx have been found. Most of these pieces are dated to the Early Historic period.

It is likely that the craftspeople who manufactured stone beads and cameo blanks may also have produced pieces meant to be used as inlays.



Ring stones



(x2.5)



(x5)

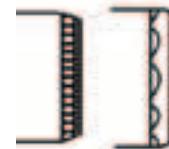
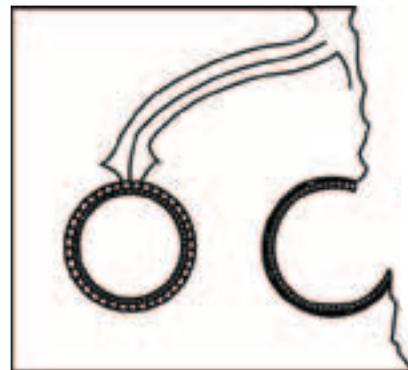


Stone Moulds

Moulds are stone slabs with depressions within which a molten material, often metal, would be poured to take the shape of the depression.

Beautifully crafted moulds made from close-grained stones have been found at Pattanam.

These depressions have designs and decorated edges indicating that the objects moulded in them were pieces of jewellery, probably made of gold.



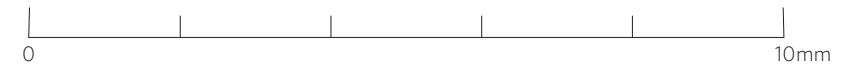
The Fortuna Intaglio

A carnelian intaglio, with a human figure etched on it, measures about 1.5 x 1.0 cm. The figure is etched on one side of a thin oval-shaped carnelian piece that is slightly curved or convex. The figure is placed vertically on the oval piece. It was recovered from locus 13 of the Early Historic sediment-debris layer of Trench PT14 XLIII at a depth of 130 - 140 cm.

Stratigraphically, it can be dated to the early centuries CE. The human figure etched on it with striking perfection is the Greek Goddess Tyche or the Roman Goddess Fortuna.



scale 1:1



magnified x10



x10



scale 1:1

The Leaping Lion Intaglio

This carnelian intaglio, measuring 1.2 x 1.0 cm, has a figure of a leaping lion on it. The figure is etched on one side of a thin oval-shaped carnelian piece which is slightly curved or convex. The figure is placed horizontally on the carnelian piece.

It was recovered from locus 022 of the Early Historic sediment-debris layer of Trench PTXVII at a depth of 115 - 120 cm. Stratigraphically, this can also be dated to the early centuries CE.



Botanical Products

Various botanical products were also part of the trade into and out of the southwestern coast ports. One important product that was shipped out in vast quantities as noted in Sangam as well as Classical texts was black pepper. An important plant product that came in seems to have been frankincense.



The botanical products excavated in 2008 include black pepper, cardamom, rice, wheat, green gram (*cheru payar*), lentil (*cheera*), mango seeds, goose berry seeds, Indian jujube, Arto carpus, Borassus palm, brinjal, ladies finger, gourds, arecanut and coconut shells. A rope made from an unidentified plant fiber was also obtained.

Trade Plants

Crumbs of frankincense were found in several excavated layers at Pattanam. These were also found below the occupation in natural soil. Frankincense grows in the Western Ghats. However, this, as well as myrrh, may have been brought along with other goods to Pattanam from Southern Arabia by sea, from the ports of Khor Rori and Cana.

The *Periplus* tells us that Gangetic nard of the spikenard family (*Nardostachys jatamansi*) was shipped out from Nelkynda and Muziris. The best nard to make ointments was exported from Barbarikon and Barygaza, and the more inferior varieties may have gone from Muziris.



Botanical drawing of a cardamom plant (1692). A living cardamom plant is part of the exhibition display, courtesy the Spices Board.

Black Gold

Black pepper, (*Piper nigrum*) used as a spice and as a preservative, found its way eventually to Roman dining tables. Black pepper was exported to the Roman world from the Malabar Coast.

The term 'black gold' refers to its being exchanged directly for gold coins.

In the *Naturalis Historia*, Pliny the Elder (CE 23-79) mentions that it grew in the interior areas and was brought to Muziris in canoes made of hollowed tree trunks. It apparently accounted for more than half of a ship's load going to the Red Sea. Sacks of pepper may even have functioned as ballast for a ship on its return journey to the Red Sea. Amphorae of wine and oil served the same purpose on the journey to India.

Black pepper was found from the wharf area in the excavations at Pattanam. Here, it might be worthwhile to mention that an Indian pot with 7.5 kg of black pepper was excavated from Berenike, a contemporary port site of Muziris, on the Red Sea Coast.



Botanical drawing of Pepper, from 'Indicus Malabaricus (1686). Pepper plants have also been included in the exhibition.

Muziris is closely associated with the pepper trade, as can be seen from the Tamil poem *Agananuru*:

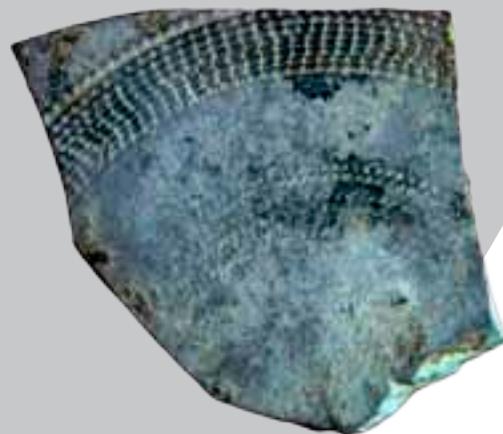
"...the city where the beautiful vessels, the masterpieces of the Yavanas [Westerners], stir white foam on the Periyar, river of Kerala, arriving with gold and departing with pepper – when that Muciri, brimming with prosperity, was besieged by the din of war."

LIFE AT PATTANAM: MATERIAL CULTURE

Yet, there was much that was local at Pattanam. The settlement was essentially a coastal settlement of Tamilakam. The material that was local and utilitarian in nature comprised pottery of various types, artefacts made of terracotta, iron, copper, lead and gold, and stones such as granites.



Fine Grey Ware



Indian Rouletted Ware



Russet-Coated Pottery

Indian Pottery

The pottery that is local to the Malabar Coast constitutes about 99% of the total pottery from Pattanam. Much of it must have been produced in the vicinity of Pattanam.

The major types of local or Indian pottery are Black and Red Ware (BRW), Russet Coated Painted Ware (RCP), Indian Rouletted Ware (IRW), and 'Type 10' fine grey ware.



Black and Red Ware



Black Ware



Russet Coated Painted Ware (RCP)

This type of local pottery can be either red or black ware with a shiny smooth surface or slip. The ware acquires its shine through firing. Designs, in rectilinear or curvilinear patterns, are painted in white on the exterior. This type of pottery is seen along with BRW at Iron Age and Early Historic sites in South India.

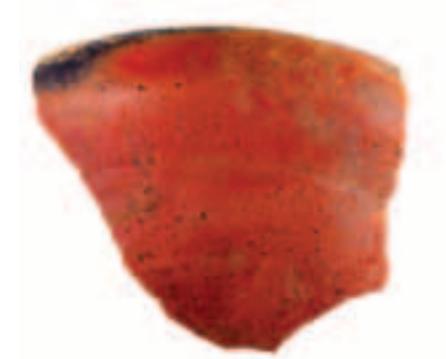
A single RCP sherd with wavy parallel lines has been found at Pattanam. It is an important chronological marker, as this type is associated with the Iron Age - Early Historic transition period.



Black & Red Ware (BRW)

This type of pottery is characterized by a black interior and a red exterior. When pots were inverted during firing, oxygen could not reach their interior and hence the blackening of the interior.

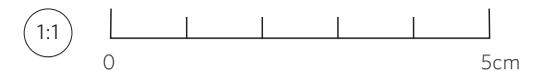
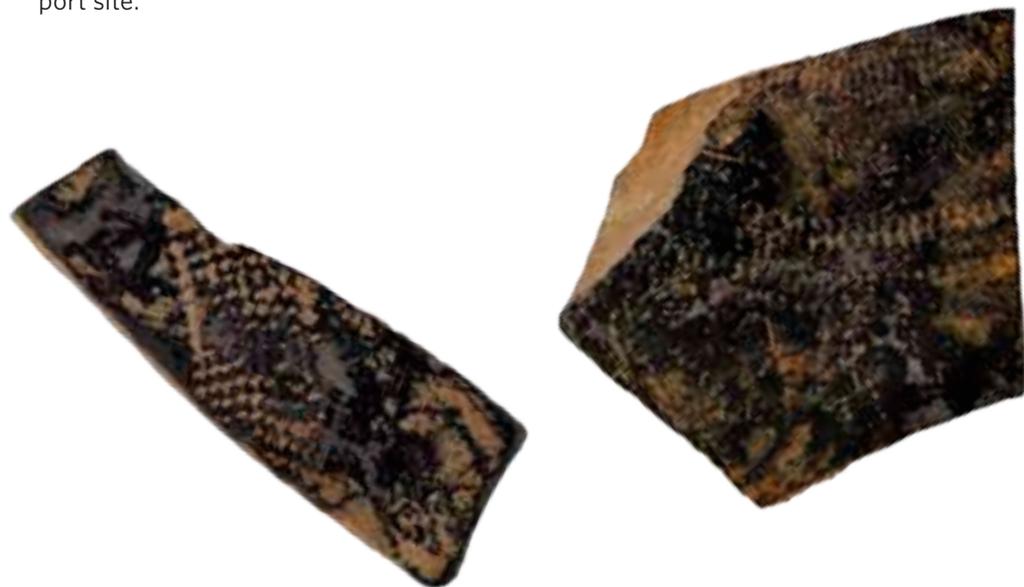
In South Indian contexts, BRW is associated with the Iron Age-Early Historic burials and habitations.



Indian Rouletted Ware (IRW)

This is a wheel-made fine grey ware. The name of the pottery comes from the roulette marks on the inside of the flat bases. Earlier, it was considered to be an imported Roman ware (Arikamedu Type 1). But today, it is understood as locally produced pottery with the technology of rouletting introduced from the Classical world.

Pattanam has the largest assemblage of IRW; more than any other Indian Ocean port site.



Grey Fine Ware Arikamedu 'Type 10'

This refers to a fine ware type with grey paste, which has been assigned as 'Type 10' by Wheeler in his classification of Arikamedu fine ware. The sherds found at Pattanam generally have black slip.

They are decorated by thin concentric circles and in a few sherds, embossed/stamped bird motifs were seen. Only a small number of sherds of this type have been found at Pattanam.



TERRACOTTA: THE MAGIC OF FIRED CLAY

Clay, so commonly found, was used at Pattanam in construction, and made into bricks, tiles, *chulahs* or hearths. It is also a material that once fired, results in objects that will last.

Clay was used at Pattanam to make ornaments such as beads of various shapes; tools such as crucibles for melting metal or whorls for spinning thread; and toys such as balls or marbles.

Clay was also formed into vessels of various shapes, stoppers, and spouts, and fired.

But what were the discs, shown in this display, used for? Were the perforated ones weights for a loom or some kind of plaything?



Discs



Lamp



1:1



Beads



1:1



Stopper



Crucibles



1:1

The Art of Hand Spinning

The spindle whorls in this display are of a distinctive nut shape: these are evocatively called "arecanut beads". We know now that these were not beads but tools for spinning thread.

These objects were fitted on a rod or spindle and used as a fly-wheel, to prevent the rod from wobbling. The spindle was twirled by the hand allowing the thread to be spun onto it.

Some of the whorls displayed here have a tiny remnant of the rod or spindle in their perforation. This was probably the oldest technique for spinning and done completely by hand, unlike the spinning wheel of later periods.



x2



1:1



IRON: THE METAL THAT CHANGED THE WORLD



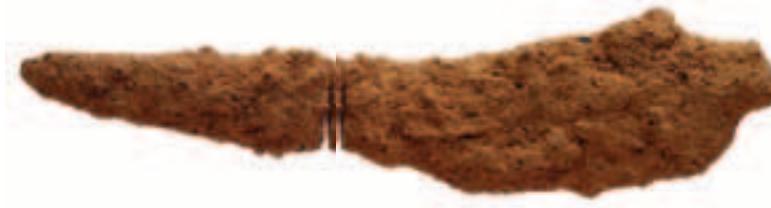
2:1 Axe



Hook



Nail
0 2 cm



Knife
0 2 cm



Chisel
0 2 cm



Ring
0 2 cm 1:1

Artefacts made of iron, copper, lead and gold have been found at Pattanam.

Once iron metallurgy was learned, iron became the favoured metal to make basic tools for agriculture and manufacture. More than its durability, it was its easy availability that promoted the use of iron. Hence, it was used for making a variety of objects.

At Pattanam, iron was used from the beginning, from the Iron Age. However, the largest number and variety of artefacts made out of iron are found in the Early Historic period.

It seems that largely objects of a utilitarian nature, were made out of iron. These tools ranged from kitchen tools to farming and manufacturing tools to objects used in construction; iron was used to make weapons as well.

In the category of kitchen tools, are knives, tongs and spoons. Farming tools were axes and sickles, while chisels were manufacturing tools. Other artefacts of a domestic nature were hooks, chains, rings and nails. Axes might also have been used as weapons, as were spearheads and daggers.

Iron is a metal that corrodes or rusts easily. Having been buried in the soil for several centuries, most of the iron objects you may see here have encrustations.

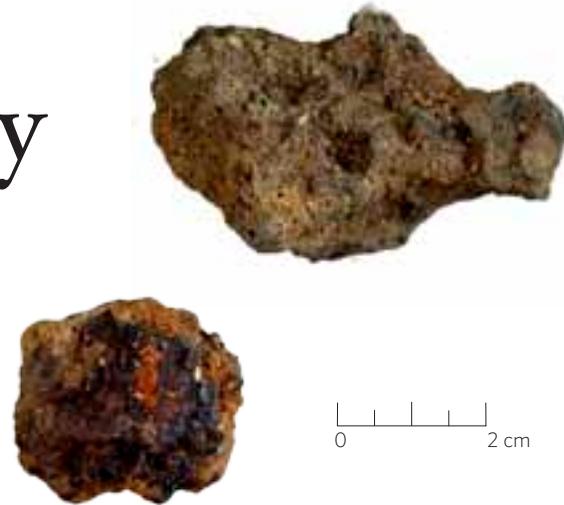
Iron Metallurgy

Iron metallurgy seems to have been practiced at Pattanam. The immediate hinterlands of Pattanam are rich in lateritic iron ores. This explains the easy availability of the raw material.

We know this from numerous finds of slag, a major by-product of metallurgy. When the iron ore is smelted in a furnace, the ore is reduced to the metal, and other residues and impurities. It is these residues or impurities that are called 'slags'. Some of these slags can be seen in this display.

Slags can be tested for the presence of iron. How much iron remains in the slags indicates how efficient the smelt was.

Normally, slags are left at the place of smelting. These help the archaeologist to identify the location where smelting was done.



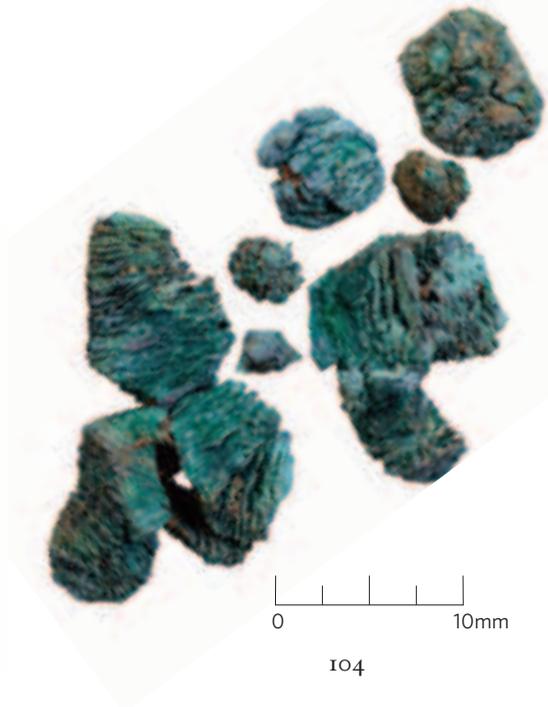
1:1

Copper: The Red Metal

The popularity of iron for making basic tools meant that copper was used to make decorative artefacts and ornaments.

Rings and antimony rods (or kohl sticks) fall within the category of ornaments and toilet articles. There are a few functional objects like hooks, lid pieces and nails. A few copper slags suggest some amount of copper smelting at Pattanam.

So, why is it called the red metal when whatever is displayed here is blue-green in colour? Copper and its compounds corrode with a green deposit or layer on exposure to the air or moisture. This deposit is called verdigris and helps to identify the object as copper.



x2.5



105



Copper Coins

An important category of copper artefacts are the coins. Coins are immediately datable through either their inscriptions or - if there is no writing - then through their motifs and styles. Coins and their denominations also give us information on the economy. Often, coins were issued by a state. Most of the coins at Pattanam belong to the early Cheras. They have been recovered from a secure stratigraphic context for the first time in Kerala.

The Chera coins are either circular or square, and heavily eroded. Their obverse has an elephant motif and the reverse has a bow and arrow motif. Gaud and cosmic symbols are also visible on some coins.

You will see that the coins displayed here show no verdigris. This is because they have been conserved by an archaeo-chemist.

Lead: The White Metal

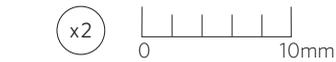


Lead is a durable metal and resistant to corrosion. Most of the artefacts that you see here still have a silvery-grey colour.

Lead was used by the Cheras to make coins. These coins have the same elephant motifs on one side and the bow and arrow motifs on the other side, as seen in the copper coins.

Lead was also used for making objects that we cannot immediately recognize. These are long strips that have been rolled up tightly. These have been called 'scrolls'.

Several scrolls have been found at the Red Sea port of Berenike, a contemporary port site of Pattanam. Were some of these imported by Pattanam? And what were they used for?



A silver coin at the same scale



Lead scrolls



Gold: The Precious Metal

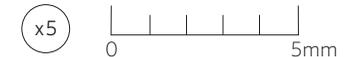


Gold is a highly malleable, indestructible metal, with an advantage - it never corrodes. Its malleability enabled it to be used to make varying kinds of artefacts of complicated shapes and designs.

What was the source of the gold? We know that gold is found at Kolar in Karnataka. But, as Pliny lamented, some of the Roman gold brought in to pay for the black pepper could have been used to make artefacts such as these.

Gold at Pattanam was used to make ornaments, wires, filaments or threads, and a few artefacts. Among the artefacts there is a gold ring and a remarkable miniature axe.

Gold ornaments



Golden Axe



The miniature axe made of gold, displayed here, was possibly a pendant or an ornament as it seems to have a loop near the handle. This beautiful, realistic-looking object, weighing 189 mg, was found from the earliest levels of the Early Historic period.

The axe has the handle attached with cross-bands. This is a method of hafting that has been noted on full-size iron axes from megalithic graves in South India.

Was this miniature object a treasured ornament or something to be proudly displayed as a measure of status?



STONE TOOLS

Most of the domestic artefacts found at Pattanam are made of stone, specifically granite. These artefacts mainly include pieces of grinding stones and occasional stone tools.



Grinding stone

An elongated rounded stone seems to have been used for grinding grains and spices. It would have been used as the upper stone on a larger flat or slightly concave stone. Grains or spices spread on the surface of the lower stone were ground with the upper stone in a rubbing action.



Stone Adze

This chopping or cutting tool, slightly rounded on one side, is characteristic of the Neolithic, going back to about 5000 BCE, in South East Asia. It was generally flaked from a large nodule, then ground and polished. It is not quite clear what it was used for at Pattanam.



Stone weights

Weights are small parabolic shaped smoothed stones, with flattening on one side, to allow them to sit in a pan without rolling. It is this flattening which differentiates them from stone marbles. Such weights may have been used for weighing light objects, as the size of the weight displayed here shows.



Sliced granite stone

This neatly sliced granite stone, from the Early Historic levels at Pattanam, indicates an advanced stone slicing technology. These look like four slices of a potato, cut with a very sharp tool.



ARCHITECTURAL REMNANTS



Bricks

Walls recovered in the excavations at Pattanam show that bricks were used in construction. These are baked bricks made of mud mixed with sand and straw. Mud seems to have been the bonding material used in the brick architecture.



Early Historic bricks measured 40 x 20 x 7 cm. In later periods, several of these bricks were reused. There is also much structural disturbance in the later levels that can be seen in the form of collapsed walls and piles of bricks.





Toilet feature

Baked clay floors

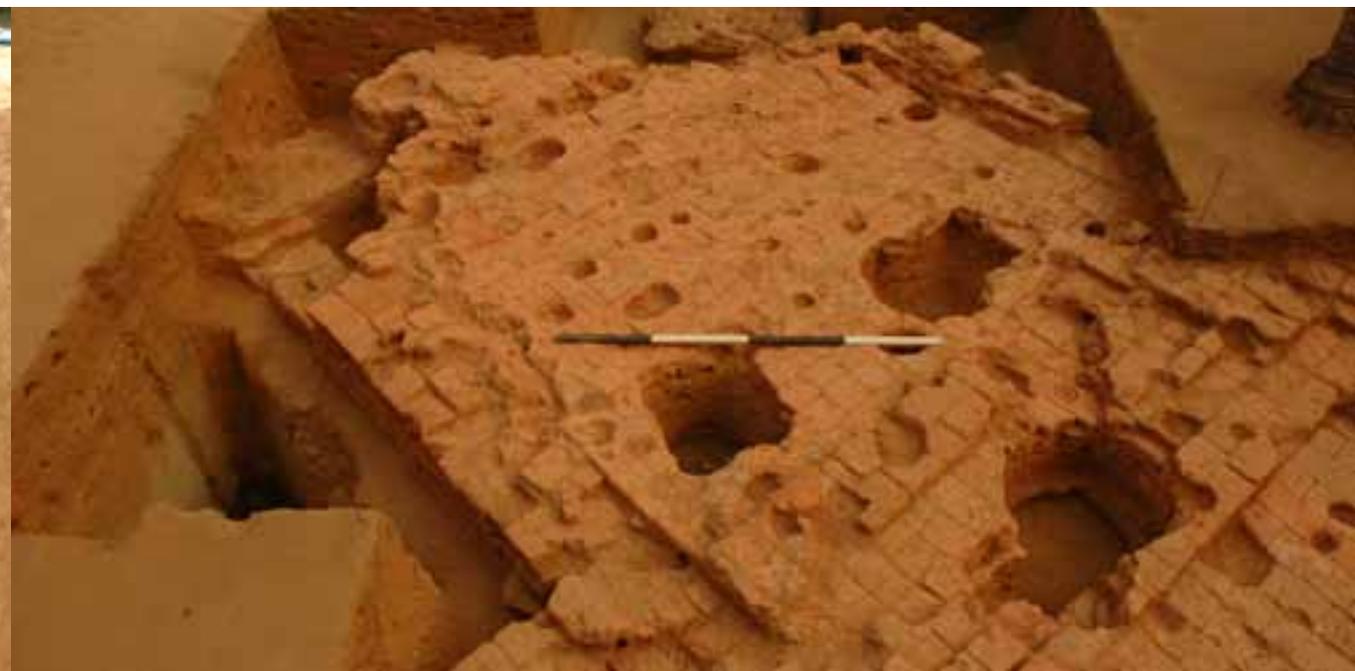


Terracotta ring wells



Brick structures

Brick structure with post holes





Tiles

Several kiln-fired tiles have also been found but no rafters or roofs have been found associated.

The most common Early Historic roof tile is a variety, with three grooves along the length on one side and a single groove on the edge of the other side. It is this single groove with which the tile was fixed on a roof. Some of these tiles had a hole, for fixing them to wooden rafters with nails.



The Wharf

A wharf is an area like a wide wall built beside the edge of the sea or river, to moor ships and boats, and to load and unload cargo or passengers.

In 2007, a wharf-like structure made of laterite granules, lime, and clay was found adjacent to a waterlogged deposit, at Pattanam. (This mix could be the predecessor of the Roman *pozzolano*, a mix of volcanic ash and lime or the local *surki* made of lime, sand and laterite/brick granules.)

A brick lining, probably a protective layer, has been found towards the lower part of the wharf where it touched water. Only a portion of the wharf could be exposed as it extended into land that was privately owned.

The exposed part of the structure in the North-West, South-East direction is 6 m long and 7.30 m thick at a depth of 245 cm in the Early Historic layers.

A rich assortment of botanical remains in a surprisingly well preserved condition was found in the water-logged area of the wharf context at a depth of 275 cm under a layer of 25–35 cm thick clay. It seems that the clay layer acted as a protective cover, hence, preventing oxidation and consequent decay of the palaeo-botanical remains. The botanical assemblage from the wharf context include black pepper, cardamom, rice, wheat, bread fruit seeds, grape pips, teak, *Aini*, leaves, coconut fronds, coconut shells, prop root base of arecanut, bamboo pieces, green gram, lentil, mango seeds, Indian gooseberry, Indian jujube, Borassus palm, brinjal, ladies' finger, gourds, *Anjeni*, and resin (frankincense). Decayed rope pieces, made of an unidentified plant fibre, have also been found from the water logged area, though away from the wharf context.



A Canoe



A canoe is a small light narrow boat tapering at both ends. In the 2007 Pattanam excavation, a highly decayed 6 m-long wooden dug-out canoe was found adjacent and parallel to the wharf like structure. The wood was identified to be *Anjili* (*Artocarpushirsutus Lamk*), a locally available wood.

The canoe and bollards, from the same context as the wharf, have been radiocarbon dated by leading laboratories in the USA and India: the University of Georgia and the Institute of Physics, Bhubaneswar. Recovered dates fell within the 1st century BCE - 1st century CE period. Hence, it may be assumed that the wharf could also belong to roughly the same period.



C. 2000 CE

CONTEMPORARY

Pattanam has also inspired contemporary art. Vivan Sundaram's installation 'Black Gold' uses potsherds to create a labyrinthine landscape (see video). Bara Bhaskaran's water colours and A K Ajithkumar's oil painting are artistic reconstructions of the two thousand year old wharf excavated at Pattanam: the canoe and bollards were radio carbon dated to the 1st c. BCE /1st c. CE. Riyas Komu has created a wood sculpture, his interpretation of an intaglio with an etching of the Roman goddess Fortuna. Also displayed are E P Unny's fine pen & ink drawings of Hindu, Christian, Muslim and Jewish sacred spaces in the Pattanam region.





Vivan Sundaram
'Black Gold', 3-channel video installation

'Black Gold'

In search of gold is an ancient story. But there is another old story: in search of black gold – pepper.

A terracotta installation comprising tens of thousands of 'discarded' potshards forms an imaginary (two thousand year old) sea-port city – Muziris. The lay-out of this installation suggests an archipelago; the phenomenological experience of circumambulating the 'site' is that of precious minitiation. The geographical allusion turns into a metaphor; the archipelago folds into a playground of infancy.

When the camera traverses the site, the dense formation takes on yet another visage: 'dead' matter unravels fresh terrain that is in its very fragility combusive. Animation created by a range of perceptual positions – camera movements from high above swoop onto details creating arabesques; top-angle views—the plan, the map—bring forth islands surrounded by water; the flattened image becomes a stained glass sky. Low angle shots drag the viewer through the remains of human habitation.

The video image oscillates between showing a bed of detritus and an emerging gestalt that may be deciphered as history. A scene of devastation, a cityscape submerged in a cataclysmic spill – millions of floating peppercorns. Or is this meteoric patina covering another planet?

Often in mythic and historical tales there is a tragic end: the flood.

There is the sound of the deluge.

There is the silence of the aftermath.

Beauty is located at the shifting centre of slow time that enables us to stand on solid ground – to plunge into waters that carry us to other shores.

CURATORS NOTE: P J Cherian

80,000 body sherds out of the 4.5 million body sherds recovered from the excavation at Pattanam were used to make this installation. These body sherds are conventionally discarded after thorough documentation. This imaginative re-use of potsherds by Vivan Sundaram should make us more perceptive about preserving excavated material. The KCHR proposes the non-destructive use of the Pattanam body sherds for a "Public Art" at the Pattanam archaeological site.



Vivan Sundaram
'Black Gold', photograph



Riyas Komu
'Fortuna'
sculpture in wood



Bara Bhaskaran,
oil painting



Ajith Kumar G,
watercolour



PATTANAM SKETCHBOOK, drawings and notes by E P Unny (courtesy, The Indian Express)



Mattamudi Ferry - could have been River Periyar before the great flood of 1341.



Excavated artefacts in Padamadathil Site



Cheruvu Stone Bridge, 1500 CE - the first crossing of Cheruvu



Palace of Travancore, Thiruvananthapuram



South Travancore Palace, 1700 CE - built by the Dutch



The official residence of Polytheethan - Dutch-built.



Well at Mattamudi, Travancore - built by the Dutch

KERALA COUNCIL FOR HISTORICAL RESEARCH



The Kerala Council for Historical Research (KCHR), Thiruvananthapuram, is an autonomous institution committed to inter-disciplinary and collaborative research in social sciences. Funded by the Department of Higher Education, Government of Kerala, the KCHR is a recognised research centre in the University of Kerala.

The KCHR strives to integrate advanced research and scholarship with historical and social consciousness through its projects and programs. The Pattanam Archaeological Research by the KCHR has evolved into a major material culture study project involving leading Universities and Research Institutes in India and abroad. The institution offers doctoral, post-doctoral and internship programmes, and short term courses in social theory, research methods, epigraphy, palaeography and numismatics. Research, publication, documentation, training and co-ordination are the major domains of the KCHR's activities.

The KCHR has a well-equipped library, and a research resource centre with books, and publications that include thirty four volumes on Kerala's history and society, that are vital to research.



Since 2006-'07 the KCHR has conducted eight seasons of excavations at Pattanam, and has dug 60 excavation units or trenches, so far. This has been in collaboration with several national and international universities and institutions. It has published the Interim Reports of the eight seasons and brought out handouts on the same. The Pattanam Archaeological Database - excavation data - has also been digitized, making access easier.

The KCHR owns 5 acres of land on the Pattanam archaeological mound. It endeavours to use this land to initiate a project on Green Archaeology by promoting organic farms and the use of bicycles, for site conservation and the preservation of a natural heritage zone in the village.

The KCHR is offering Senior and Junior International Research Fellowships in Material Culture Studies in the Pattanam Archaeology Research Programme.

THE GREEN ARCHAEOLOGY PROJECT

PATTANAM VILLAGE: GARDEN OF SPICES,
FLOWERS AND MEDICINAL PLANTS



Committed to the preservation of the archaeological wealth at Pattanam, the KCHR has bought 5 acres of land on the Pattanam mound for research and site conservation.

The objective is to protect the approximately 111 acre archaeological mound through organic farming of traditional spices, medicinal plants and flowering plants. Organic farming will only disturb the top layer - 1m - of the 4m thick cultural deposit at Pattanam. The archaeological relics deep beneath, will remain safe and undisturbed. Also, organic farming ensures that there will be no risk of corrosion and other chemical damage to the artefacts.

The unique strength of Pattanam village is its people. The KCHR will give the women the responsibility of being the caretakers of the archaeological site. The KCHR also intends to train the Pattanam householders in strategies of marketing, and find ways to sustain the initiative.

Experts from the Spices Board, the Kerala Forest Research Institute (KFRI), the Agricultural and Veterinary universities in Kerala, Kudumbasree units, and NGOs working on ecological projects will be roped in to design, create and support scientific landscaping, floriculture and harvesting, and marketing of produce.



BUY CYCLES. BICYCLE.

As part of the community archaeology and heritage management initiative, the Pattanam Archaeological Research team is promoting the use of bicycles in the village. The aim is to transform Pattanam into a natural, eco-friendly heritage zone by limiting the use of motor vehicles, and creating alternate living practices.

Already, bicycles donated to the Green Archaeology Project by the KCHR well-wishers, are gifted to the Pattanam village on a need or merit basis.

With the Green Archaeology Project, the KCHR hopes to harness the vast traditional systems of knowledge of indigenous communities, showcase their rich heritage, and integrate this with ways to preserve the environment.



PATTANAM RESEARCH DESIGN

- Excavations and explorations
- Post excavation studies
- International academic collaborations
- Digital database of Pattanam Archaeological Records
- Site conservation with community participation
- Site interpretation centers and Imaginariums
- Green Archaeology
- Multi-specialty archaeo-science laboratory
- Indian institute of archaeology/University for material culture studies
- A model heritage site (World Heritage status for Pattanam)

INSTITUTIONS COLLABORATING WITH KCHR ON PATTANAM ARCHAEOLOGICAL RESEARCH

- Oxford University, UK
- British Museum, UK
- University of Rome, Italy
- University of Pisa, Italy
- Camilo Jose Cela University, Spain
- The Palace Museum, China
- University of Durham, UK
- University of Delaware, USA
- St. Lawrence University, USA
- University of Georgia, USA
- Archaeological Survey of India (ASI), Thrissur Circle
- Deccan College of Archaeology, Pune
- Spices Board India, Kochi
- National Institute for Advanced Studies (NIAS), Bangalore
- National Geo-physical Research Institute (NGRI), Hyderabad
- Centre for Cellular & Molecular Biology (CCMB), Trivandrum
- MS University, Baroda
- Tamil University, Thanjavur
- University of Pondicherry, Puducherry
- Indus Research Centre, Chennai
- Centre for Earth Science Studies (CESS), Thiruvananthapuram
- Institute of Physics (IOP), Bhubaneswar
- Kerala Forest Research Institute (KFRI), Trichur
- Indian Institute of Technology (IIT), Roorkee
- The College of Engineering, Thiruvananthapuram
- Christ College, Irinjalakkuda
- Rajeev Gandhi Institute of Technology, Kottayam
- Inspiration, Ernakulam
- Union Christian College (UCC), Alwaye

ACKNOWLEDGEMENTS

Final list to be inserted with logos and thanks.
KCHR to finalize.

Add Jishnu.

Ateet
(THE PAST)

*Why are you silent, oh past?
You have no beginning, nor any end-
All ages have poured their tales into you
Mingling so many life streams and thus
Losing their own voices.
Still, fearsome silence!
Why don't you speak?
You are not unconscious as I have felt,
Your stirrings in my heart at times
Dropping treasures from days bygone,
To enrich my life.
You work in silence-
In so many worlds,
But keep still and secret.
Oh, speak to my heart -
Of those forgotten by everyone else,
The stories of their lives, which you have stored-
Need a language, for others to know.
Oh Sage ! speak to me
And help me record and give voice
To those lost memories.*

- Rabindranath Tagore