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1.INTRODUCTION

Archaeology is the scientific study of ancient cultures and the way people lived based on the things they left behind. The purpose of archaeology is to understand how human beings in the past interacted with their environment and to preserve the history for present and future learning. The study of the cultures includes the examination of the artifacts, objects made, used or changed by man. To some extent, it can be defined as our voyage to the past, where we discover, who we were and therefore who we are. In broad scope, archaeology relies on cross-disciplinary research. Archaeology always relies heavily on the materials left behind by our forefathers.

The State Department of Archaeology was started in the year 1961 with the objectives of conservation and preservation of ancient monuments in Tamil Nadu, and to conduct excavations at historical sites. Subsequently, its activities were expanded to include Epigraphy copying and deciphering of stone inscriptions, printing and publishing them in book form, setting up of site museums, chemical preservation of art objects, registration of antiquities etc. The aim of the department is to showcase the rich heritage and glorious traditions of Tamil Nadu with its classical Tamil language, magnificent monuments, exquisite temples, art and sculpture and diversified traditions. This is essentially a research department to disseminate knowledge about ancient cultural heritage of Tamil Nadu through a combination of fieldwork, analysis and publication.

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The Department has 8 Field Offices, 14 site museums, a library at Head Office, the Government Oriental Manuscripts Library and Research Centre at Chepauk, Chemical Laboratories at Chennai and Madurai, Photography and videography section, Printing section, besides the Institute of Epigraphy which operates from the Head Office.

The department has a library at its headquarters in Chennai with over 11,500 volumes on archaeology, anthropology, art, history, epigraphy and palaeography. It houses copies of important journals such as Indian Antiquary, Asiatic Researches, Sacred Books of the East, International Journal of Dravidian Linguistics and Journal of Tamil Studies.

The department publishes a quarterly journal called Kalvettu. Like the Archaeological Survey of India (ASI), it also publishes excavation reports and guide books for tourists, district wise list of inscriptions and museum guides. The department also publishes journals and monographs on archaeology-related topics in both English and Tamil. It has a library of archaeological literature.

An epigraphy wing was inaugurated in 1966. Since its inception, the epigraphy wing has prepared estampages of about 14,000 inscriptions which are preserved at a facility in Udagamandalam. The department started an institute for epigraphy in 1973-74.

It is headed by a Dr. R. Nagaswami was the first Director. It initially functioned from a small premises near Mandaveli. In 1992, it shifted to Taramani and, later In 2003, it moved to its present premises - a newly constructed building named "Tamil Valarchi Valagam" in Halls Road, Egmore.

The Department has undertaken the several archaeological digs in sites such as Vasavasamudram, Padavedu, Thirukkoyilur, Gangaikondacholapuram, Palayarai, Karur, Perur, Alagankulam and Korkai in Tamil Nadu. The excavations at sites like Vasavasamudram, Thirukkoyilur and Gangaikondacholapuram have been published. The Department has initiated

underwater archaeological explorations in the Poompuhar-Tarangambadi (Tranquebar) stretch on the Tamil Nadu coast.

The most important excavations are those at Korkai (1968), Vasavasamudram (1970), Kanir (1973) and Alagankulam (1990, 1993). The digs at each of these sites have revealed ancient Roman and pseudo-Roman objects, including pottery, thereby proving the brisk maritime trade between the Roman Empire and the South Indian kingdoms, mainly around the First Century A.D. The excavations at Gangaikondacholapuram (1980, 1984, 1991) have yielded the ruins of the brick palace of the Chola king Rajendra 1 (1014.1044 A.D.).

The Department has 87 archaeological sites and buildings under its care. These buildings are spread all over Tamil Nadu, Among them, only one structure is within Madras city. This is a memorial pillar on Anna Salai (Mount Road) not far from the Mannalong Bridge (now Maraimalai Adigal Bridge) across the river Adyar in Saidapet. The pillar commemorates the erection of the neighbouring bridge across the Long Tank Drainage Channel by a Madras merchant named Adrian Fourbeck in 1786. The pillar has inscriptions in four languages Tamil, English, Latin and Persian.

In the neighbourhood of Madras, the Department maintains a few monuments, such as the Fort at Alamparai (or Alambarai) near Maduranthakam.

In 1980, an Archaeology Chemistry Laboratory was it started in the Department. It initiated restoration of old d stone objects through paper pulp treatment. It is in the process of acquiring more scientific equipment for the analysis and conservation of archaeological relics. The Department maintains archaeological museums s in or near archaeological sites in Tamil Nadu. One such museum is the Prehistoric Museum at Poondi,. palaeolithic site, close to Madras. The Museum exhibits Stone Age artefacts. It is one of the country's few museums exclusively devoted to the prehistoric period of human civilisation.

Archaeology studies the story of man's past through his material remains. The word archaeology comes from the Greek word 'Archaios' – Ancient and 'logos' – theory or science. Archaeology is essentially a method of reconstructing the past from the surviving traces of former societies. Both archaeology and history are concerned with the study of human past. Archaeology presents another method of approach to history, a study of human cultures through the material remains.

Excavations :

The Department identifies and carries out excavations at historically important sites. It has so far excavated 32 sites and unearthed various artefacts. Geological facts of the excavated area is also studied. Some of the excavated sites have been converted into site museums.

Pre-Historic Sites

Anaimalai (1969):

Anaimalai is situated in Coimbatore district. The Department undertook a trial excavation of a dolmen at Manamboli, a village in the Anamalai Hills in the year 1969-1970. The dolmen was found on a road under formation on the way to Parambikulam- Aliyar Project.

A small piece of iron point, probably of a pointed knife, was found during the excavation. A few pieces of black and red ware pottery with different burial type potteries were also found. This excavation has thrown more light on burial type and the burial antiquities. These objects are datable to megalithic period. (1000 BCE to 300 CE).

Kodumanal (1992–1993, 1996–1997,1997-1998):

The Tamil Nadu State Department of Archaeology in collaboration with the Tamil University, Thanjavur conducted excavations at Kodumanal situated in Perundurai taluk in Erode District.

The excavation had brought to light two cultural periods viz:

1. Megalithic period
2. The early historic period

Black and red ware, black slipped ware, russet coated ware and red slipped ware were found in the excavation. Apart from these, beads made of quartz and clay, inscribed potsherds and graffiti potsherds were unearthed.

A megalithic cairn circle at this site was also excavated. The grave goods such as lids, bowls, dishes, four legged jars and ring stands were found placed outside the primary cist. At the southeastern side of this primary cist an urn was found which surprisingly yielded 782 beads made of carnelian. An iron sword measuring 169 cm length was also found at the eastern side of the main cist. Besides, four iron swords, a copper toddy filter with lotus and peacock designs, double edged axe, small daggers, stirrup like object, potsherds bearing graffiti were also gathered.

Mangudi (2001 – 2002):

Mangudi is situated in Sankarankoil Taluk of Tirunelveli District. The author of *Maduraikanchi* Mangudi Marudanar was supposed to have hailed from this place. Roman pottery pieces were already collected in surface explorations conducted in this village. So with a view to bringing out the history of this place, excavation was conducted in the year 2001-2002 by the Department of

Archaeology. 10 trenches were laid bare at the site called Naicker-Punchai. This excavation has brought to light two cultural periods

1. Microlithic Period
2. Early historic Period

The significant find from this site is a black and red ware piece containing Tamil Brahmi inscription. The inscription has been deciphered as "*Kurummangala Athan yi Yanai Po*". This belongs to the Sangam period (2nd century BCE).

Early - Historic Sites

Vasavasamudram (1969 – 1970)::

Vasavasamudram is a coastal village in Kanchipuram district and lies eleven miles south of Mamallapuram, and north of Vayalur, another historic site. The exploration revealed conical jars and neck of an amphorae and proves the fact that this site had trade contacts with Rome during 1st and 2nd century CE. In the excavation two ring wells were exposed. Both the ring wells were found close to each other. These two ring wells were also very close to a brick lined tank, which was probably used for dyeing or washing. The important potteries found at Vasavasamudram were rouletted ware, amphorae, red ware, red slipped ware, black slipped ware and brown ware etc.

Alagankulam(1986-1987,1990–1991, 1992-1993,1994-1995,1996–1997, 1997-1998, 2017):

Alagankulam is a village situated on the east coast in Ramanathapuram Taluk and district. The village is situated on the banks of the river Vaigai and is about three kilometers away from the seashore. The most significant findings of the excavation are hundreds of potsherds of the Mediterranean region. They include Rouletted ware and Amphorae jar pieces. Pieces of Red ware with Tamil Brahmi letters have been found. They are assignable to the first century BCE.

Other antiquities include beads, perforated tiles, and bricks in various levels. Three Roman coins were unearthed. They contain the figure of the head of the Roman Emperor on one side and the figure of goddess of victory, holding a globe on the other side. The legend on them shows that the Roman Emperor Valentine II who ruled around 375 CE issued the coins.

Korkai (1968 – 1969);

Korkai is a small village in Srivaikuntam Taluk of Tuticorin district. It is situated at a distance of 3 km to the north of the river Tamaraparani. The sea originally had receded about 6 km to the east. The river Tamaraparani skirted this town in ancient days. The site is referred to in Tamil Sangam literature, and has attracted the notices of the classical geographers as an important port of pearl fishery.In the excavation a structure with nine courses of bricks in six rows was unearthed at the depth of 75 cm from surface level. Below the structure three large sized rings placed one over the other (probably soakage jars) were found. Inscribed potsherds bearing Tamil Brahmi letters assignable, to 300 BCE to 200 CE were also found. Charcoal samples were collected which were assigned to 785 BCE, by the Tata Institute of Fundamental Research, Mumbai.

Pallavamedu (1970 – 1971):

Pallavamedu is a mound situated at the outskirts of Kanchipuram, it is traditionally believed to contain relics of the Pallavas. The present excavation revealed three periods of occupation. The findings are related to the Pallava rule of this region from 6^{th} to 9^{th} century CE.

Poompuhar (1994 – 1995, 1997 – 1998):

Poompuhar, situated at the confluence of river Cauvery with the sea, was a flourishing port city and the second capital of the Cholas in the Sangam period. It is situated in the Sirkazhi taluk of Nagappatinam District. The Department of Archaeology conducted excavation at Kizharveli and Dharmakulam areas. The Kizharveli excavation revealed two brick walls, running Northeast-Southwest at a

depth of 20 cm. Soft clay had been used as a binding material. These two brick walls were placed wide apart and provided with platforms, the intention being that there should be free movement of water. Four wooden poles were found, two made of the Palmyra tree trunk and the other two made of Iluppai tree trunk (Bassia Longifolia). This structure seems to have served as a wharf in the 4th century CE. Underwater exploration work was also conducted at Poompuhar in the year 1996-1997 in collaboration with National Institute of Oceanography, Goa. Lead ingots were obtained in the search.

Tirukkovilur (1992 – 1993):

Tirukkovilur is situated on the southern bank of the river Pennar in Tirukkovilur taluk of Villupuram district. It was the capital of Malayaman chieftains of the Sangam age. The excavation conducted here yielded amphorae pieces, red slipped ware, red ware, pottery pieces with graffiti marks and potteries of later period datable from 100 BCE to 1300 CE. An interesting finding is the occurrence of a pipeline measuring 9.5 metres laid with fifty terracotta pipes. This pipeline must have been used for bringing drinking water from the river or channel nearby. Another important finding from this trench was a red ware potsherd having been embedded with a female figure datable to 4th century CE.

Maligaimedu (1999 – 2000):

The excavations were conducted during the year 1999-2000 at Maligaimedu in Panruti Taluk of Cuddalore district. Three cultural sequences have been revealed from the excavations. The excavation yielded Black & Red ware, red ware, black ware, rouletted, coarse red ware, inscribed potteries and a copper coin with the Ujjain symbol. The habitation of this site may be fixed between 300 BCE and 1300 CE.

Perur (2001 –2002):

Perur, once known as Kanchivaiperur is situated in a strategical location near Coimbatore. From July-October 2002, the Department of Archaeology

conducted excavations in this site at two locations namely Kallimedu inside the Santhalinga Ramasamy Adigalar College Campus and Thiruneetrumedu.

Medieval Sites

Gangaikondacholapuram (1980 – 1981,1986 – 1987):

Gangaikondacholapuram is situated in Jayangondam Taluk of Perambalur District. It was a secondary capital of the Cholas for about 250 years. The city seems to have had two fortifications, one inner and the other outer. Excavation conducted at two locations at Maligaimedu revealed the remains of royal palace, built with burnt bricks. The ceilings were covered with flat tiles. The pillars were probably made of polished wood, supported on granite bases. Excavations revealed brick walls about 1.10cm in thickness. On the foundation wall, granite stone pillar bases were embedded at an equal distance of 2 meters. Bone objects with animal figures, ivory carvings, quartz beads, shell bangle pieces and stone objects were found during the excavation. The excavation also yielded celadon ware and porcelain sherds. Both of them are of Chinese origin. This shows the contact of the Chola kingdom with China during 11^{th} to 12^{th} centuries CE.

Palayarai (1984):

Palayarai was the secondary capital city of the medieval Cholas. It is situated about 7 kms away from Kumbakonam. Megalithic urn burials were already reported from Nandanmedu near Palayarai. The excavation at a mound covering an area of 20 acres of land yielded early potsherds like black and red ware belonging to the megalithic period. Medieval potsherds such as coarse red ware, black ware, porcelain potsherds, glass and shell bangle pieces, terracotta spouts, knobs, terracotta and stone beads and terracotta ear lobes were also found. Heaps of terracotta lamps belonging to the medieval period were also unearthed.

Sendamangalam (1992 – 1993,1994 – 1995):

Sendamangalam is situated in the Ulundurpet taluk of Villupuram District. In the 12th - 13th centuries CE this village was in a flourishing stage and it served as the headquarters of the Kadava chiefs. A brass seal, containing the royal emblem of the Pandyas i.e. two fishes and the royal whip, belonging to the 13th century CE was collected from this place during surface exploration conducted by the staff of the Department. So a systematic excavation was conducted at Maligaiveli and Kottaimedu near Kuyavanodai here. Rouletted ware, black and red ware pieces and a ring well belonging to 1st-2nd century CE were discovered. A number of terracotta figurines were obtained.

Andipatti (2004-2005):

Andipatti is located at 15 Km from Chengam town in Chengam taluk of Tiruvannamalai District. Systematic excavation was carried out by the Tamil Nadu State Department of Archaeology in the year 2004-2005.

Excavation at two sites namely Nattamedu and Sambalkadu, yielded pottery of Megalithic and Historic period. Pottery collection include Black and Red ware sherds and coarse red ware sherds. On the basis of unearthed antiquities such as terracotta objects and figurines of 6th to 12th Century CE and megalithic appendages, it is understood that this site had been continuously inhabited since 1st Century BCE till 12th Century CE. The remarkable findings include inscribed postsherds, graffiti postsherds and terracotta figurines of mother goddess. Two cultural periods were demarcated from the unearthed antiquities.

Modur (2004-2005):

Modur is situated at 15 Km from Dharmapuri town, Palacode taluk, Dharmapuri District. Subsequent to exploration at three habitational mounds,

which yielded Neolithic and Megalithic antiquities, excavation was carried out in the year 2004-2005.The excavation at Modur yielded good number of Neolithic Celts, Rubbing stones, Hammer stones, Grinding stones and Megalithic appendages. Besides this, terracotta objects such as figurines of Ram (Goat) and Mother Goddess were also collected. Three cultural habitations are identified and are characterized with the occurrences of relevant antiquities.

Marakkanam (2005-2006):

Marakkanam is situated at 35 Km from Tinidivanam town, Tindivanam Taluk, Villupuram District. Excavation was conducted here in the year 2005-2006 to explore the antiquity of this place; as this place has been referred in Sangam literatures of '*Ṣirupanarrupadai*' and '*Perumpanarrupadai*'.

Exploration near Boomeshvar temple yielded terracotta pipes and coarse red ware potsherds. On account of this, trenches were laid in and around Boomeshvar temple and anitquities pertaining to medieval period were collected. The unearthed antiquities include copper coins, gold coin, terracotta spouts, smoking pipes, terracotta utensils, iron objects, porcelain sherds and copper rings. Present excavation at Marakkanam has revealed two cultural periods namely Medieval and Modern periods, which has been arrived from the findings.

Parikulam (2005-2006):

Parikulam is located at 4 Km from Poondi reservoir, Tiruvallur Taluk in Tiruvallur District. The exploration in and around this village yielded good number of Palaeolithic tools and wood fossil from Mettupalayam, a nearby village. Based on this, a systematic excavation was conducted here in the year 2005-2006.

Excavation at Parikulam has revealed four stratigraphical layers and yielded various types of tools, which exposed all three Palaeolithic periods such as Lower, Middle and Upper Palaeolithic cultures. The unearthed tools include Hand Axes, Hammers, Cleavers, Scrappers, Discoids, Lunates, Blades and Borers. On account

of rich yield of variety of tools from a single site, it can be ascertained that Parikulam might have been a factory site.

Mangulam (2006-2007):

Mangulam, located at 25 Km from Madurai town, is a well known site for the presence of early Jain Caves and Rock beds in the hillock called Ovamalai. Systematic excavation was conducted at the potential sites of this village during the year 2006-2007. Potteries of Black and Red ware sherds, coarse red ware sherds, pieces of quartz stones, small sling stones and a copper coin (datable to 13-14th Century CE) were collected from the trench laid near Meenakshipuram. Excavation on the terrace of Jain caves exposed the flooring of a rectangular chamber and brick wall, made of 11 courses of bricks. The size of the bricks is 35 x 18 x 6 cm and clay mortor has been used as binding material.

Excavation has also exposed a small structure in pedestal form which may be assigned to Sangam period. Present excavation has exposed the presence of two cultural periods viz Early and Medieval historic period.

Sembiankandiyur (2007-2008):

Sembiankandiyur, situated on the river bank of Vikrama nadi (Tributary of River Cauvery) is at 15 Km from Mayavaram in Myiladuthurai Taluk, Nagappatinam District. Excavation at this hamlet was conducted in the year 2007-2008.

Excavation yielded Megalithic (Iron Age) appendages like Black and Red ware sherds, Black ware sherds and Red slipped ware sherds. Thirteen graffiti marks were observed in the pottery collection from excavation trenches laid at Sembiankandiyur. Pots (small to big) lids and plates were the common shapes encountered in this excavation. Terracotta hip-hops and stone hip-hops were also recovered from the trenches. Besides this, the occurrences of eight Urns laid in a row were also exposed during excavation.

On the basis of rich yield of Megalithic antiquities, it is ascertained that Sembiankandiyur was inhabited during 1st Century BCE (Megalithic-Iron Age).

Tranquebar (Tarangampadi):

Tarangampadi, the historical port, lies on the East Coast in Poraiyar Taluk of Nagapattinam district. The river Poraiyur locally called Uppanaru, has a confluence with the Bay of Bengal on the Southern side of the fort.

Tarangampadi fort was first constructed in 1620 CE by the Danish. The King of Denmark sent two ships to India under the leadership of Ove Gedde with the help of Roeland Crape of Holland; a treaty was signed between Thanjavur Nayak ruler, Ragunatha Nayak and Ove Gedde on 19 November 1620. This agreement was written in golden leaf. According to the agreement the port Tarangampadi was given to the Danish traders and provision was made for collecting the tax and Danish traders and provision was made for collecting the tax and construction of the fort.

A joint excavation will be conducted by the Danish Government in collaboration with ASI and TNSDA. The excavation was carried out in the northern side of the fort for 20 days in March 2008. Five trenches were laid before the fort and all the trenches were excavated up to the moat level. In this excavation a drop bridge constructed by the Danish period was identified in the entrance of the main gate. This drop bridge may be made up of with the wooden pillars and floor of the entrance was high and brick paved platform. The bridge contains three platforms and all the three are constructed with the help of bricks and mortar. Total breadth of the moat was 24 mts. In this excavation Chinese potteries and smoking pipes made in Denmark in Danish clay were recovered.

Under water Exploration & Excavation

Poombuhar:

The sphere of excavation has been extended to off shore. Tamil Nadu is famous for a number of Ports on the Eastern seacoast. The Ports of Sopatanam, Kaverippumpattinam, Tranquebar, Karaikkal, Periyappattinam and Kanyakumari are mentioned in the chronicles of foreign travellers as well as in Sangam literature. Kavirippumpattinam is said to have submerged under sea. Hence, the

Archaeology Department in collaboration with the National Institute of Oceanography, Goa in the year 1981 conducted a preliminary exploration. By deploying sophisticated equipment it has spotted some heaps in about 30-meter depth off the shore of Poompuhar.

Airlift operations in 7m depths revealed three courses of stone masonry off Vanagiri (the near by site at Poompuhar). The stone blocks vary in size 30x20x5 cm, 65x40x10 cm and 60x35x10 cm. The approximate date of the structures can be ascertained to 2nd century BCE - 4th century CE.

The shipwreck discovered in 1991 at a water depth of 19 m was explored further and the wooden planks of the hull were traced. The ship is about 50 m in length and 15 m in width. A heavily encrusted cannon measuring 2.1 in length was located close to the wreck. The most important findings were lead ingots recovered from the wreck. Some of them bear the name of the English company, W. BLACKETT, which was the large-scale producer of the lead ingots. Two ingots are stamped with the year 1791 while others with 1792. The average weight of the ingots is 68.5 kg. They are 87-90 cm length , 15 –18 cm breadth and 6 cm thick. Hence, an exclusive Underwater Archaeological Site Museum was established at Poompuhar.

The site museums are set up in locations where excavations were carried out in archaeologically significant sites.

In addition to one Underwater Archaeology Museum located at Poompuhar, there are fourteen District Archaeological Site Museums coming under the control of this Department. The Museum is opened mainly to create archaeological and cultural awareness among the public. The excavated antiquities that are available in that area are exhibited in the Site Museum.

2.LIBRARY

The Department has one of the best libraries in the country housing over 11,500 books on *Archaeology, Anthropology, Art, History, Epigraphy and Palaeography*, authored by reputed foreign and Indian scholars and experts. Collections and reprints of old and rare journals like *Indian Antiquary*, (60 volumes), and *Asiatic Researches*, (24 volumes), are also kept here. Reprints of old publications on Indology like the *Sacred Books of the East* (50 volumes) and *Ancient Indian Tradition and Mythology* (40 volumes) are also housed here. This is one among the very few libraries containing published versions of advanced research works in art and archaeology. Tamil Nadu State Archaeology department Library was started in 1963 with 300 books. At present it has 11,500 books and journals of very rich, rare, old and important books.

3.CONSERVATIONS

CONSERVATION OF MONUMENTS:

So far the department of archaeology has undertook the 90 ancient and historical monuments including religious and secular buildings have been declared as protected monuments by the State Government. Recently they have added temples as protected monument names like, "Cave Temples namely Karivartharaja Perumal cave temple, Sivan Temple, Vedhandheeswarar Cave Temple" at Vallam Village, Chengalpattu Taluk, Kanchipuram District have been declared as protected monuments. In addition to this, 21 new historical monuments were identified to be declared as a "Protected Monument" of Department of Archaeology.

The Archaeological chemical laboratory wing is functioning in this Department from 1980 onwards to preserve the monuments, antiques like bronze images, copper plates, coins, terracotta, stucco and paintings etc.,

The archaeological artifacts collected from exploration and excavation are chemically conserved in the department chemical laboratories functioning at Chennai and Madurai. These chemically treated antiques are displayed for public in 14 site museums which create a general awareness about our past history.

The corroded portion of the metal antiquities made of gold, silver and copper are carefully removed and chemically treated. Organic material viz. Palm leaves, wooden artifacts and manuscripts etc that are affected by oil, dust and insects are also chemically treated.

CONSERVATION OF METALLIC OBJECTS:

Metals as materials have more strength and flexibility of manipulation than stone or clay or wooden objects; but when it comes to chemical stability they (except gold and silver) fall far short of the latter. They are susceptible to many

factors, which bring about their deterioration, resulting in the formation of deleterious compounds conducive for further deterioration and the ultimate transformation into forms (ores / minerals) in which forms) they occur in nature. Corrosion is the menace that the Conservator faces with metallic antiquities.

The principle behind this is that when objects are buried for a long time under certain conditions that are reasonably constant, they tend to attain a state of equilibrium with their surroundings. This will constitute the first stage in metallic corrosion. Soon after excavation these materials are once again exposed to yet another entirely new environment upsetting the earliest equilibrium in which they had been conditioned; and owing to such series of changes, most metallic objects are profoundly affected. Metallic objects buried in salty ground are exposed not only to moisture but also to the action of corrosive salts dissolved in the ground water. In short excavated objects exposed to a new environment may cause a new type of corrosion to break out afresh as they once again tend to adapt themselves to the new conditions.

4.EPIGRAPHY BRANCH

Epigraphy is the study of inscriptions on rocks, pillars, temple walls, copper plates and other writing material. It is one of the most fascinating and instructive studies. It deals with the art of writing, which distinguishes man from animals and provides us with an instrument for conservation and transmission of historical traditions from generation to generation. Inscriptions are the main source for reconstructing the history and culture of ancient civilizations. It serves as primary documentary evidence to establish legal, socio-cultural economic, political achievements, literary, archaeological, and historical antiquity on the basis of engravings.

Recent Survey on Indian Epigraphy (1996) places inscriptions of Tamil Nadu at the top of the list. The categories of language, alphabet and number of inscriptions on both stone and copper plates also indicate Tamil Nadu as the first among Indian States. From this survey it can easily be understood that Tamil Nadu has the bulk of inscriptions found in India. It has been estimated with a fair degree of accuracy that the inscriptions written in Tamil occupy the first position in volume, amounting nearly to 20,000, followed by those in Kannada (10,600), Sanskrit (7,500) and Telugu (4,500). Inscriptions in Tamil language are noticed from the third century BCE onwards.

A separate epigraphy department was started during the year 1966. The primary function of this department is to copy inscriptions on boulders, stone pillars, stones, temple walls and on copper plates. The inscriptions are deciphered, edited and published. So far, about 14,000 inscriptions are copied.

CLASSFICATION OF TAMIL BRAHMI & ASOKAN BRAHMI

Brahmi script the earliest writing system developed in India after the Indus script . It is one of the most influential writing systems; all modern Indian scripts and several hundred scripts found in Southeast and East Asia are derived from Brahmi.

The Brahmi script relates to whether this system derived from another script or it was an indigenous invention. In the late 19th century, Georg Bühler advanced the idea that Brahmi was derived from the Semitic script and adapted by the Brahman scholars to suit the phonetic of Sanskrit and Prakrit. India became exposed to Semitic writing during the 6th century BCE when the Achaemenid empire took control of the Indus Valley (part of present-day Afghanistan, Pakistan, and northwestern India). Aramaic was the language of administration in the Achaemenid empire, and official records were written using a North Semitic script. Around this time, another script also developed in the region, known as Kharosthi, which remained dominant in the Indus Valley region, while the Brahmi script was employed in the rest of India and other parts of South Asia. Although we are confident that Kharosthi is an adaptation of Semitic, the connection between Brahmi and Semitic remains unclear. Another position has been advanced by professor K. Rajan, who has argued that the precursor of the Brahmi script is a system of symbols found on graffiti marks located on several sites in Tamil-Nadu (South India). In this region, hundreds of graffiti either inscribed or carved on potsherds and rock have been found: some of these symbols are found at the end of Brahmi inscriptions. Dilip Chakrabarti supports the connection between graffiti marks and Brahmi based on evidence found at Vallam (South India), where the stratigraphic sequence has shown that only graffiti inscriptions were present in the lower levels, followed by a mix of graffiti and Brahmi script in the middle phases, followed by only Brahmi inscriptions in the latest strata. A similar picture has been produced by excavations at Mangudi, where only graffiti is found on early contexts, followed by examples of Brahmi script in the upper levels. Whether Brahmi truly derives from graffiti is hard to confirm but the connection between the two systems cannot be ruled out.

There is a third position that claims that Brahmi derives from the Indus script, a writing system employed in the Indus Civilization which fell out of use as this civilization came to an end. Those who support this hypothesis point out the resemblance between some of the signs of these scripts. Given the complete absence of material evidence linking both writing systems, this view seems both speculative and hard to verify. Until a few decades ago, the earliest securely dated examples available of the Brahmi script dated back to the 3rd century BCE, during

the time when India was ruled by the Mauryan dynasty. These examples were found on a set of royal rock inscriptions spread in North and Central India by the Indian emperor Ashok (268 BCE to 232 BCE), known as the Edicts of Ashoka Inscriptions.

Despite the lack of any earlier examples, some scholars argued that the Brahmi script had originated earlier than the 3rd century BCE. They supported such a claim on the basis of a number of observations. The emergence of prose is hard to imagine without the support of writing technology. Further evidence comes from the work of Panini, the renown ancient Indian grammarian who composed an influential work on grammar analysis of Sanskrit during the 5th or 4th century BCE. It is unlikely that a work like this could have been produced in a preliterate context. Knowledge of writing in India is also recorded by writers who joined Alexander to India roughly a century before the time of Ashoka. During the late 20th century CE, the notion that Brahmi originated before the 3rd century BCE gained strength when archaeologists working at Anuradhapura in Sri Lanka retrieved Brahmi inscriptions on pottery belonging to the 450-350 BCE period. The earliest of these examples are single letters, and their dates have been established through radiocarbon dating.

Most examples of Brahmi found in North and Central India represent Prakrit language. The Ashokan Inscriptions already show some slight regional variations on the Brahmi script. In South India, particularly in Tamil-Nadu, Brahmi inscriptions represent Tamil, a language belonging to the Dravidian language family, with no linguistic affiliation to the Indo-Aryan languages such as Sanskrit or Prakrit. Some Tamil examples come from inscribed potsherds found at Uraiyur (South India) dating to the 1st century BCE or the 1st century CE. In Arikamedu (South India) there is also evidence of an early form of Tamil in Brahmi inscriptions, dated to the early centuries CE. At this stage, different Brahmi characters specially adapted to suit Tamil phonetic were already in use. Examples of Tamil have not been identified among the earliest securely dated examples of Brahmi found at Anuradhapura in Sri Lanka, where the language represented is Prakrit.

By the 2nd century BCE, the Brahmi script becomes more widespread, and we can also detect the rise of marked regional variations. Ashokan inscriptions are found on carved rocks, caves, stones slabs, and rock pillars. We also have some examples of short Brahmi inscriptions on small seals made of ivory, bone, stone, and terracotta dated to Mauryan times. Other examples come from potsherds and copper plates. With the rise of Buddhism as the dominant faith in India, we find Brahmi inscriptions on monumental constructions known as 'donative records,' stating the names of different donors. The early 2nd century BCE saw the beginning of Brahmi inscriptions on coins.

The use of perishable materials as a writing medium is an ancient widespread practice in South Asia, particularly palm leaf and birch bark. As portable and affordable writing surfaces, these materials are ideal. Direct material evidence on the use of palm leaf and birch before the time of the Ashokan Inscriptions have not been found. This lack of direct evidence could have more to do with the bias of the archaeological record due to the destruction of evidence over time rather than the actual absence of a written tradition on perishable materials. Indirect evidence of the possible use of perishable writing surfaces has been retrieved at Sringaverapura in North India in the form of traces of birch wood, from levels dated to c. 10th to 7th century BCE period.

SANSKRIT

Sanskrit was thought to the students by Smt. Bhagya Lakshmi during the period of Internship. It is very helpful for us in the study of epigraphy. As many of the inscriptions are in Sanskrit, it will help us to deciphering it and understanding the text of the inscriptions. Sanskrit is an ancient and classical language of India in which ever first book of the world Rigveda was compiled. The Vedas are dated by different scholars from 6500 B.C. to 1500 B.C. Sanskrit language must have evolved to its expressive capability prior to that. It is presumed that the language used in Vedas was prevalent in the form of different dialects. It was to some extent different from the present Sanskrit. It is termed as Vedic Sanskrit. Each Veda had

its book of grammar known as Pratishakhya. The Pratishakhyas explained the forms of the words and other grammatical points. Later, so many schools of grammar developed. During this period a vast literature -Vedas, Brahmana-Granthas, Aranyakas, Upanishads and Vedangas had come to existence which could be termed as Vedic Literature being written in Vedic Sanskrit.

Panini (500 B.C.) was a great landmark in the development of Sanskrit language. He, concising about ten grammar schools prevalent during his time, wrote the master book of grammar named Ashtadhyayi which served as beacon for the later period. Literary Sanskrit and spoken Sanskrit both followed Panini's system of language. Today the correctness of Sanskrit language is tested upon the touchstone of Panini's Ashtadhyayee. As per the Indian tradition Sanskrit Language has no beginning and no ending. It is eternal. Self-born God has created it. It is divine. It is everlasting. It was first used in Vedas and thereafter it has been the means of expression in other fields. Sanskrit has been the source of later languages and literature in India. Pali and Prakrit were first to develop from Sanskrit. Pali was taken as means for exposition of Buddhistic ideas and Prakrit was used for the spread of Jain doctrines. Most of the Buddhistic literature is written in Pali and that of Jain cult in Prakrit. A vast amount of Buddhistic and Jain literature was also written in Sanskrit periodically.

ESTAMPAGE

Estampage is the French term for stamping. Stamping is also know as pressing is the process of placing flat sheet metal in either or coil into a stamping press where a tool and dies surface forms the metal into a net shape. The inscriptions considered in our work are from Indian subcontinent. These Indic inscriptions have a composite mix of characters that evolved during there of several dynasties and kingdoms. They are usually found to be engraved on a variety of stones and other durable materials. Conventionally, they are studied offline by generating estampages of the inscription surface. For this, the surface of the stone inscription is first cleaned with water-soaked brush. Then, the stone surface is carpeted by a large piece of wet paper (or layers of paper),which is gently patted by a dabber made of some soft material. The dabberis smeared with Indian ink to get the impression of the surface. The paper is allowed to dry on the stone surface before taking it off. The ink impression (estampage) comes out white letters (grooves of the characters) against black background on the paper. Epigraphers usually take several days to few weeks for reading, transliterating, and for translating these estampages. With elapsing time, these inscriptions are gradually deteriorating to a un-decipherable state.

Although estampages are taken for many of them, it is very difficult to preserve these estampages, as they fade away very soon. Frequent generation of estampages would cause the inscription to degrade more, since it involves a physical activity on the inscription surface. Hence, with advancing technology, various imaging techniques have emerged for acquiring images with considerable originality and economical viability. However, extraction and processing of information and text from these images is a challenging problem due to various factors, such as uncontrolled illumination, multilingual text, low-contrast distinction between the groove and the surrounding surface, distortions due to perspective projection, and administrative constraints in using imaging devices at heritage sites.

5.CLASSIFICATION OF MUSEUM OBJECTS

Any object representing culture, art etc., preserved in a museum qualifies itself to be a museum object. They vary from one to the other due to nature, type, property etc. Their vulnerability to damage and their control measures also differ. Depending upon the type of treatment to be given to the objects, they can be classified as follows:

1. Metals
2. Organic objects
3. In- organic objects
4. Paintings

Organic Objects

Materials derived from living organisms are organic objects. Wooden objects like temple cars, doors, clothes, palm leaves, leather objects etc., are prone to climatic changes. The environment should be stable and the objects should be attended to carefully, as insects also at large easily affect them.

In-Organic Objects

Inorganic materials are very stable. They are complex in nature. Stone pillars, sculptures, inscriptions, terracotta objects glass, ceramics etc., are some of the inorganic materials. They are mostly exposed to the atmosphere and are affected both by rain and weathering takes place. They should be treated and preserved.

Paintings

Whatever may be the medium, type and variety, the paintings are multi-layered and therefore, they require special study and treatment. There are various types of paintings like murals, oil paintings, water colour paintings, panel paintings, glass paintings, miniatures in paper etc.

ATMOSPHERIC FACTORS AFFECTING MUSEUM OBJECTS:

Conservation refers to the whole subject of the care and treatment of museum objects both movable and immovable. The two aspects of conservation are the control of the environment to minimise the decay of museum objects, and their treatment to arrest decay and to stabilize them where ever possible against further deterioration. Therefore one who is interested in the conservation of museum objects must know the damaging effects of the environment on them such as light, humidity and air pollution, sound and vibration and what to do to minimise their damage.

Light:

Light is a form of energy. It can change colours, can bring about deterioration on the surface; where surface is the very essence of exhibits like paintings, drawings; textiles and can bring down the strength of the object. Stone, metal, glass and ceramics are not affected but all organic objects such as cellulosic and proteinaceous are affected. Light is much more potent than heat as far as art objects are concerned. The spectrum of radiation from museum light sources such as daylight, fluorescent and incandescent lamps etc., can be divided into three regions, by wavelength. They are ultraviolet radiation (300-40011m),light or visible radiation (400-70011m) and infrared radiation (beyond 70011m). The light of wavelength up to 50011m brings about degradation on materials by photochemical reaction. Therefore the light should not directly fall on the objects, but only reflected light from a surface painted with zinc oxide or titanium oxide should be allowed. These chemicals absorb the ultra-violet radiation from the light.

Heat:

A small change in temperature can have several effects. But temperature change is not as important as humidity change except when it, in effect, causes humidity changes by drying. Storage with low temperature can be of benefit to archival materials and textiles. Excessive radiant heat must be avoided, but there should be no problem at 50 or 200 lux of light. Rise in temperature influences the rate of deterioration by light

Humidity:

The moisture content of air is humidity. Objects originated from plants and animals have water in them. If the moisture is taken away from wood, ivory or bone, they contract and very likely to split and warp. The absorption of moisture makes objects swell and vice-versa. In changing size, they also may change shape or warp. Many museum objects are made of composite materials.

Humidity Control:

Air-conditioning is the best way, as it not only controls humidity but also removes dust and gaseous pollutants from the air. One single equipment cannot humidify and dehumidify. Therefore, humidifier or dehumidifier can operate but with a humidistat, which maintains a constant R.H. automatically by switching a heating system on and off. There are electrically operated humidifiers of atomizing and evaporative types and dehumidifiers of desiccant and refrigerant types. For humidification, an evaporative type of humidifier should be chosen because of its convenience. For dehumidification in warm climates, a refrigerative type of dehumidifier and in cold climates a desiccant type should be used.

Air Pollution:

Air pollution is one of the serious dangers posed to museum objects. The various means by which air pollution created is, particulate matter, gaseous pollutants, salt sprays, sound and vibration. Air pollution, therefore, is the contribution of various factors. In the atmosphere is due to expulsion of smoke in the factories, due to fuel combustion, vehicular traffic, salt spray from the sea, etc. The walls of new concrete buildings give off dust of alkaline in nature inside the buildings.

Salt Sprays:

The salts preserving dust in the atmospheric air are chlorides, silicates, carbonates, ammonium sulphates etc. The chlorides are the most dangerous contaminant, which affects metals, stone objects, terracotta objects etc. Droplets of

seawater are thrown into the air, and they may evaporate to form sodium chloride crystals, which are carried by the wind inland. In fact only coastal museums will be affected most.

Sound and Vibration:

Sound and vibration affect weak museum objects. Sound affects museum objects and therefore a specification is suggested for maximum allowable background noise from traffic and local machinery in an exhibition or storage area. Vibrations caused by building work, traffic, ventilation equipment and other machinery affect weak museum objects. High frequency sound and vibration should be avoided in the galleries and storage areas. Human factors such as poor handling and lack of training to staff to tackle objects result in serious damages to the objects either in the storage, transportation or in museum galleries. Careless handling of the objects results in soiling, dents, scratches, abrasions, tears etc.

Human Vandalism:

Vandalism is a deliberate act by which damages are made on the museum objects. Acts of true vandalism are fortunately very few. The visiting public is generally respectful of the works of art on display. The motivation of the deranged individual to damage the objects take place in crowded galleries. The defacement of paintings or sculptures with graffiti by pencils, pen, etc.,

Silverfish:

Both the young ones and adults cause surface damages to paper, eat away glue, paste etc., from books and documents, herbarium specimens, photographic plates, paintings of the Tanjore style as they involve, paper, textile and paste.

Cockroach:

Both the adults and young ones damage wool, leather, paper, herbaria, ethnographic and natural history materials, palm-leaves.

Termite:

There are two main categories of termites. They are dry-wood termites and subterranean termites. The subterranean termites maintain a link with the earth, whereas the dry-wood termites live in wood. Adults bring about irreparable loss or damage to wooden objects, furniture, showcases, panels, books, textiles, and other cellulosic materials. Structural timbers may be coated with creosote, zinc chloride or sodium fluoride.

Book-lice:

Adults of book-lice cause surface damages to paper, herbaria, leather, gelatin of photographic plates, Tanjore panel paintings, watercolor paintings etc. Such materials are gas with para-di-chloro-benzene to drive off the insects. Insects Organic objects like wooden objects, leather, textiles, books, stuffed biological specimens etc., are worst affected by insects. Insects bore holes into the materials and eat voraciously. The insect menace is high due to high temperature and humidity. Some of the most common insects attacking materials are silverfishes, cockroaches, termites, moths, beetles, book lice & crickets.

6.DOCUMANTARY SHOWS

DOCUMENTARY ON GUDIYUM CAVES:

It was presented by Ramesh Yanthra and V. Vasantha Kumar's documentary Gudiyam Caves: Stone Age Rock Shelters of South India takes you on a fascinating journey into the prehistoric rock shelters. Palaeolithic caves hidden away in the hills 70 km from Chennai. The caves are in the Gudiyam village, in the Thiruvallur district near Poondi reservoir, and Yanthra came across them three years ago, Vasanth, who filmed the self-funded documentary saw a signboard in the village which said that this was a site of Palaeolithic people and was so intrigued that visited the caves.

The 33-minute film has remarkable aerial shots — but the best thing about it is the historical backing that Ramesh has provided. He has extensively interviewed experts from the fields of archaeology scholars like Dr. Jinu Koshy , Dr. Shanthi Pappu , Dr. T. sathyamoorthy and geology scholars like Kumaraguru Parthasarathy parts of which are woven into the film. He wanted to present information from research papers and bulky history books in the visual medium, For he feels that this is the easiest way to make people to sit up and take notice. Geologists in the city say the Gudiyam caves were originally discovered in 1863 by British Geologist Robert Bruce Foote, who documented the existence of this prehistoric habitat in the Geological Survey of India (GSI). Subsequent digs by Archaeological Survey of India experts excavated in the year 1963 uncovered the tools made of stones used in the Palaeolithic Era, more than two million years ago. Recent research by archaeology professor Shanthi Pappu in Attirambakkam, a village near this site, has revealed that the tools collected here are nearly 15 lakh years old, and suggests that Attirambakkam may be the oldest prehistoric habitat found in India. According to Kumaraguru Parthasarathy, former director of GSI who was also part of a team that studied the site, the rock implements found there were proven to be from the prehistoric era. "We can tell by the amount of quartzite at the site that the area was occupied by prehistoric man as a workshop to build his tools. He adds that the site now belongs to the forest department and unfortunately no one has understood the tourist potential of this site. He goes on to say that the area needs to

be declared a national monument or heritage site. It is the site of Pre-historic man, one of the few such sites in India. And we are letting people from the nearby areas ruin it, Kumaraguru adds that, according to Foote's data, there are 15 more caves like in this area but since the geologist never recorded the geographical coordinates, they still have not been found. Now only two caves are accessible. The caves that have been discovered are now being heavily disturbed, and strewn with garbage. We have such a beautiful historical site in India but it has literally been taken over by the villagers. You will now find the area polluted because the villagers conduct sacrifices and poojas here.

CHOLA TEMPLES:

The great Cholas established a powerful monarchy in the 9th CE at Thanjavur and in its surroundings. They enjoyed a long, eventful rule lasting for four and a half centuries with great achievements in all fields of royal endeavor such as military conquest, efficient administration, cultural assimilation and promotion of art. All three temples, the Brihadisvara at Thanjavur, the Brihadisvara at Gangaikondacholapuram and Airavatesvara at Darasuram, are living temples. These three temple complexes therefore form a unique group, demonstrating a progressive development of high Chola architecture and art at its best and at the same time encapsulating a very distinctive period of Chola history and Tamil culture. The Brihadisvara temple at Tanjavur marks the greatest achievement of the Chola architects. Known in the inscriptions as *Dakshina Meru*, the construction of this temple was inaugurated by the Chola King, Rajaraja I (985-1012 CE) possibly in the 19th regal year (1003-1004 CE) and consecrated by his own hands in the 25th regal year (1009-1010 CE). A massive colonnaded *prakara* with sub-shrines dedicated to the *ashatadikpalas* and a main entrance with *gopura* (known as *Rajarajantiruvasal)* encompasses the massive temple. The sanctum itself occupies the centre of the rear half of the rectangular court. The *vimana* soars to a height of 59.82meters over the ground. This grand elevation is punctuated by a high *upapitha, adhisthana* with bold mouldings; the ground tier (*prastara*) is divided into two levels, carrying images of Siva. Over this rises the 13 *talas* and is surmounted by an octagonal *sikhara.* There is a circumambulatory path all around

the sanctum housing a massive *linga*. The temple walls are embellished with expansive and exquisite mural paintings. Eighty-one of the one hundred and eight *karanas*, posed in *Baharatanatya*,are carved on the walls of second *bhumi* around the *garbhagriha*. There is a shrine dedicated to Amman dating to c.13th century. Outside the temple enclosure are the fort walls of the Sivaganga Little Fort surrounded by a moat, and the Sivaganga Tank, constructed by the Nayaks of Tanjore of the 16th century who succeeded the imperial Cholas. The fort walls enclose and protect the temple complex within and form part of the protected area by the Archaeological Survey of India. The Brihadisvara temple at Gangaikondacholapuram in the Perambalur district was built for Siva by Rajendra I (1012-1044 CE). The temple has sculptures of exceptional quality. The bronzes of Bhogasakti and Subrahmanya are masterpieces of Chola metal icons. The *Saurapitha* (Solar altar), the lotus altar with eight deities, is considered auspicious. The Airavatesvara temple at Tanjavur was built by the Chola king Rajaraja II (1143-1173 CE.): it is much smaller in size as compared to the Brihadisvara temple at Tanjavur and Gangaikondacholapuram. It differs from themin itshighly ornate execution. The temple consists of a sanctum without a circumambulatory path and axial mandapas. The front mandapa known in the inscriptions as Rajagambhiran tirumandapam, is unique as it was conceptualized as a chariot with wheels. The pillars of this mandapa are highly ornate. The elevation of all the units is elegant with sculptures dominating the architecture. A number of sculptures from this temple are the masterpieces of Chola art. The labelled miniature friezes extolling the events that happened to the 63 nayanmars (Saiva saints) are noteworthy and reflect the deep roots of Saivism in this region. The construction of a separate temple for Devi, slightly later than the main temple, indicates the emergence of the Amman shrine as an essential component of the South Indian temple complex.

MADURAI STYLE OF ARCHITECTURE –NAYAKA PERIOD:

The culmination of the Dravidian style is to be seen in the period of the Nayak Rulers of Madurai who continued the building style and technique of the Pandyas and improved on it. The notable features of the Nayak architecture are the hundred pillared mandapas, the lofty gopurams embellished with figures in their minute

detail, the closed prakarams with huge pillars on either side, the beautiful corbel brackets as in Ramanatha temple in Rameshwaram and full-sized figures of animals and riders on rearing horses in the Srirangam temple.The best examples of this style is seen in the temples of Madurai and surrounding areas. The Madura style as it is called is marked by high concentric boundary walls around the temples, intervening courtyards called prakarams which contain pillared halls, store rooms, other smaller shrines and square water tanks for ritual baths. The tank is surrounded by a pillared cloister and has steps leading down to the water.Famous temples of this type are the temple of Vishnu or Ranganath at Srirangam near Tiruchirapalli, the Shiva temple at Chidambaram and the temple at Rameshwaram. The Meenakshi Temple at Madurai built by the Nayak Rulers is the most beautiful example of 17th century style of temple architecture. Containing two separate sanctuaries – one dedicated to Sundareswara and the other to his consort, Meenakshi, the temple is a massive structure and is enclosed by four walls with four large gopurams. The gopuram of nine storeys is ornamented with elaborate sculptures. On the top is a vaulted roof. A water tank in front and large pillared halls are its other features.

Thirumalai Nayakkar Mahal:

The Thirumalai Nayakkar Mahal is one of the key tourist attractions of Tamilnadu. This palace was built by the 17th-century ruler of Madurai, Thirumalai Nayak. It was the living palace of the Nayak Kings of Tamilnadu. The Nayak Kings ruled over Madurai from 1545 to 1740 and Thirumalai Nayak (1623-1659) was one of the greatest among Nayak rulers. He constructed numerous buildings in Madurai apart from this palace. Also, Madurai in the 17th century was an important trade Centre and a meeting spot for Indian and European merchants, missionaries, travelers, and citizens.

The Thirumalai Nayak Palace has a grand architectural style and design. The construction of the Thirumalai Nayak Palace was supervised by an Italian architect and as a result, the Thirumalai Nayak Palace exhibits an excellent combination of the Dravidian, the European as well as the Islamic schools of architecture. The

original Palace was four times greater than the existing structure. This palace is made up of mainly of two portions, namely Swargavilasa and Rangavilasa. In these two portions, there are a royal residence, auditorium, sanctuary, rooms, armory, palanquin place, royal bandstand, quarters, pool and garden. King Thirumalai Nayak celebrated festivals like Sceptre festival, Navarathri, Chithirai festival, Masi festival and the Float festival. Daily dance and music performances are conducted by him. Chokkanatha Nayak (Grandson of Thirumalai Nayak) demolished the place and relocated all the prized things to other places. Today, only the large rectangular courtyard called the swarga Vilasam and a few adjacent buildings survive. The courtyard measures 3,900 sq.m and is surrounded by massive circular pillars. To its west lies the Throne Chamber, a vast room with a raised, octagonal dome. This room leads to the Dance Hall. Then the palace was used as house for some officials of the judiciary and district administration.

There is a beautiful arcaded octagon, covered by a high dome, in the central throne chamber. It is approximately 60–70 feet high. The central dome is supported by ribs of stone and titanic pillars and scalloped arches, which exhibits the aforesaid blend of the three different styles and schools of architecture. The pillars are 13 meters tall and are conjoined together by a foliated brick-work. The entablature rises up to 20 meters. Unfortunately, most of the original Thirumalai Nayak Palace has been ruined or destroyed.

FORTS:

Most of the forts in India are actually castles or fortresses. But when the British Government in India were cataloging them in the 17th–19th century they used the word forts as it was common in Britain then. All fortifications whether European or Indian were termed forts. Thereafter this became the common usage in India. Three major methods were used for the construction of ancient Indian forts. The first consisted of earthen ramparts. Often they were constructed of the sand which was dug out of the ditch surrounding the fort. The second of rubble with earth on the outside which was more sturdy. The third type of construction was with stone and masonry work. The last was the strongest. Often materials from demolished forts were reused in the building of new forts. With the advent of the Muslims,

closely followed by the introduction of artillery in the 16th century there were several changes to the construction and design of forts. These changes were similar to the changes that took place in Western forts with the advent of gunpowder, i.e. the lowering of walls, thickening of walls, further pushing out of bastions etc.The gates of medieval Indian forts were highly decorated. Two distinct styles are seen. The Hindu style with a lintel and the Mughal style with an arch. Gates in Indian forts were often high and wide to allow elephants to pass. The need for security against local rajas as well as other European rival nations led to the construction of forts at each post. Mumbai fort, Fort William in Kolkata, Fort St George in Chennai were the main bastions constructed. These cities developed from the small townships outside the forts.The Danish also built fort in India when they came here to trade and the famous one is the Tranquebar fort.

Tranquebar:

Tharangambadi, formerly **Tranquebar**, is a town in the Nagapattinam district of the Indian state of Tamil Nadu. It lies 15 kilometres (9.3 mi) north of Karaikal, near the mouth of a distributary of the Kaveri River. Tharangambadi is the headquarters of Tharangambadi taluk while its name means "place of the singing waves". It was a Danish colony from 1620 to 1845, and in Danish it is still known as *Trankebar*. The history of Tranquebar could be traced back to the beginning of the Common Era. Ancient Sangam classics like the *Purananooru, Natrinai* and *Aganano*oru refer to Poraiyar as a port town i.e. *munturai*. It continued to play an important role in the history of Tranquebar till 19th century.The earliest reference to Tarangambadi occurs in a 14th century inscription, mentioning the place as *Sadanganpadi* alias *Kulasekarapattinam*. It was a commercial port attracting traders from different countries. The port has given access to inland trade from early times as it is situated on the mouth of Uppanaru. Tranquebar was a part of Chola (10th to 13th century), Pandya (14th century) kingdoms. In 15th century, under the rule of the Thanjavur king, Raghunatha Nayak, Traquebar had been an

active international trading port attracting Muslim traders, German theologians and Moravian entrepreneurs. At the time of the arrival of the Danes, Tharangambadi, as the place was then known, had already seen an influx of foreigners. Arab and later Portuguese traders had plied the coasts, and in 1620 when the Danish East India Company was established with the construction of the Dansborg Fort, trade languages on the coast were Tamil, Portuguese, Arabic and Malay. The construction of Fort Dansborg, an example of Scandinavian military architecture, built by Danish captain named Ove Gjedde was a part of a treaty signed on 19th November 1620 between the King of Thanjavur and the King of Denmark mainly for exporting pepper from India. By 1777, The Danes took complete control of Tranquebar. Tranquebar was taken by the British in 1801, but restored to the Danes in 1814, and finally purchased by the British, along with the other Danish settlements in India, in 1845. As a result, Bartholomäus Ziegenbalg and Heinrich Pluetschau opened the first printing press of India and the New Testament was translated into Tamil for the first time in Tranquebar. The architectural journey of Tranquebar can be traced back to the 14th century Masilamaninathar Temple built during the Pandya Regime. The fort is built in Danish style, characterized by large halls, columned structures, high ceilings and projecting drapery.The length of the fort in the side facing the sea is 60 m (200 ft) and the width is about 11 m (36 ft). The fort is trapezoidal in shape with three rooms in the left wing, originally used as the governor's residence, a kitchen with an open fireplace and chimney in the top left hand corner, and a church room, now a museum, located in the centre of the building.

The citadel encloses a set of buildings, the notable ones being the fort built in 1620, the Masilamaninathar Temple built in the 13th century, the Zion Church built in 1701, New Jerusalem Church built in 1718, the settlement inside the citadel is modeled like a small European town with a land gate and wooden doors leading to the main street, namely, the King's Street.

There were originally citadel walls towards the sea, which eroded with time on account of the salty nature of the environment. The fortification could not withstand an attack by regular military forces, but acted as a protection for the citizens of the settlement against predatory cavalry raids. Homes with thick stucco walls, massive pillars supporting classical pediments, verandahs on second storey,

carriage porches etc. remind us of the times when this busy trading centre was an outpost of Danish culture.

The Town Gate - 'Landporten' as the Town Gate is called in Danish, forms part of the fortifications that were built around Tranquebar in the 1660's. In 1791 the original gate was destroyed and the existing one constructed in its place. Entry into Tranquebar is through this gate designed with an exquisite Danish flare.

The Dansborg Fort - Currently a museum, it houses a number of Hindu sculptures which have been salvaged from the crumbling shore temple, replica of the treaty signed between the Nayak ruler and the King of Denmark and other relics of the bygone Danish settlement.

The Zion Church - Well-polished brass plaques on the wall reveal that the first five Indian protestant converts of the Danish mission were baptized in the Zion church in 1707.

Ziegenbalg's house - Next to Zion Church, is Bartholomäus Ziegenbalg's house. This has been taken over by the evangelical church and is now called the Ziegenbalg Spiritual Centre.

The New Jerusalem Church - Built on 9th February 1717, this church on King Street houses the grave of Ziegenbalg.

The Old Danish Cemetery - Presumably laid out in connection with the erection of the fort in the 1620's; due to the high mortality rates of the European settlers, the establishment of a cemetery must have been necessary from the very beginning. In the 1600's it was connected to the Dansborg Chapel and after 1701, to Zion Church. To this day the names of several Danish colonial officials and tradesmen can be found carved into the headstones.

7.MUSEUM VISIT

The students were taken on a field visit to the government museum at Egmore. Various artefacts at the museum was explained by the instructor from the state department of Archaeology. The chronology of the artefacts, location, importance as well as how it can be conserved and preserved for future generations was also explained.

The **Government Museum** or **Madras Museum** is a museum of human history and culture located in the neighbourhood of Egmore in Chennai, India. Started in 1851, it is the second oldest museum in India after the Indian Museum in Kolkata. It is particularly rich in archaeological and numismatic collections. It has the largest collection of Roman antiquities outside Europe. Among them, the colossal Museum Theatre is one of the most impressive.The National Art Gallery is also present in the museum premises. Built in Indo-Saracenic style, it houses rare works of artists like Raja Ravi Varma.

History

In August 1778, the governor of Madras granted 43 acres for an estate to a civil servant, who, subsequently in 1793, assigned the grounds to a committee of 24 which then regulated the public amusements in the city. In 1821, the committee sold the main house and central garden space to E. S. Moorat, an Armenian merchant who, in turn, sold it back to the government in 1830. The government first used the buildings and the grounds as the collector's "Cutcherry" and later for the "Central Museum." The museum was originally established in a building on College Road in Nungambakkam in the year 1851 and was shifted to the present site in 1854.

Many additions to the original building were constructed between 1864 and 1890. The core of the old museum building includes the only surviving remnants of the Pantheon, identified from the broad steps leading into it when viewed from the north. Amongst the additions is the Connemara Public Library, built with stained glass windows, ornate woodwork and elaborate stucco decorations,

formally opened in 1896 and named after its progenitor. The building was built by Namberumal Chetty and was designed by Henry Irwin, with the interiors resembling those of Bank of Madras. The design included a huge reading room with a wooden ceiling between two curved rows of stained glass, supported by ornate pillars and arches embellished with sculpted acanthus leaves.

The museum houses a 19th-century theatre, with the "pit" meant for those who can afford more and seating for the rest of the audience in tiered-seats arranged in a semi-circle around the pit.

The museum's collections had its origin from a gift of a collection of 1,100 geological specimens by the Madras Literary Society to the Government in 1851. The museum, the first government-sponsored one in the country, opened the same year on the first floor of the College of Fort St. George, adjacent to the Literary Society in Nungambakkam, with an exhibit of nearly 20,000 freely gifted specimens ranging from rocks to books.

Stone sculpture gallery

The sculptural gallery is devoted to the sculpture of each of the five periods of temple architecture, approximately contemporaneous sculpture from the Chalukyan area being exhibited in the opposite bays. The (dvarapalakas) on either side of the entrance to this gallery are late Pallava, while those on either side of the at stairs at the opposite end are early Eastern Chalukyan, as are also the elephants above them. The figures of Sankhanidhi and Padma- nidhi huilt into the front of the balustrades of these stairs are Pallava, and the Surya at the of the stairs very early Chola.

In the second sculpture gallery further images in stone will be found while metal images are exhibited in the building in front of the library. Buddhist and Jain sculpture in stone will be found beyondthe second sculptural gallery.

The five periods of architecture-Pallava, Early Chola, Later Chola,Vijayanagar and Modern-each has its own characteristic type of sculpture. As in architecture, too, the characteristics of one period develop gradually from those of the preceding one without any abrupt break. The primitive simplicity of

Pallava, sculpture is succeeded in the best Early Chola sculpture by a classic restraint and grace reminiscent in feeling of the earlier classical Gupta sculpture of the north. A steadily increasing conventionalism of form and elaboration of ornament are, however, the main tendencies of the latter periods.

Pallava period.-*Figures* are natural in pose arid moulding. The face tends to be slightly taller than broad, with flat nose and double chin. The front of the torso is almost flat. Draperies tend to be heavy with the main loop of the girdle hanging in a broad curve; the left hand end of the girdle projects obliquely upwards from near the middle in front. Emblems are as a rule either held. naturally in the hands or placed immediately above them, and are without flames. In Chola territory, however, the convention of their being held on two upraised fingers was alreadyin use. The discus when present is shown in profile. The *Kirita* (Vishnu's head-dress) tends to be nearly cylindrical. The sacred thread is ribbon-like, with a special fastening over the left breast; it may extend across the right forearm.

The group of Pallava sculptures in the first sculpture gallery includes a particularly fine Vishnu figure, a graceful worshipper and the bust of a horned dvarapalaka. Other Pallava sculptures will be found in the second sculpture gallery, including an image of Ardhanarisvara from Mahabalipuram and friezes of dwarfs, etc., from Kaveripakkam.

Hero stones.-*A* warrior who dies gloriously in battle is supposed among Hindus to be received at once into the *Virasvarga* or Heroes' Heaven, and it is believed that celestial damsels hover above the battlefield with celestial vehicles to carry him there. Hero stones are memorials for such heroes.

Bronze gallery

The pride of the Chennai Museum, lies in its huge collection of metal images representing the figures of the deities of the Hindu, Buddhist and Jain faiths. This huge collection of metal images have been built by acquiring them under the Treasure Trove Act. The earliest metal images on display in the Museum are the Buddhist icons from Amaravati, which on the basis of their

drapery, decorative details and physiognomical features have been roughly assigned to the fourth century A.D.

The five periods of architecture Pallava, Early Chola, Later Chola, Vijayanagar and Modem-each has its own characteristic type of sculpture. As in architecture to the characteristics of one period develop gradually from those of the preceding one without any abrupt break. A steadily increasing conventionalism of form and elaboration of ornament are the main tendencies of this development.

Physiognomical traits of the images are also taken into consideration for purposes of the chronological classification. For instance, the images of the Pallava period are natural in pose and moulding without much flexion, and have an oval shaped face, rounder limbs, flat nose, while the Chola images have a rather circular face with a somewhat sharp nose. The front of the torso is almost flat in the Pallava period while, in the Chola period it is somewhat more strongly moulded in front.

A gallery is devoted to Vaishnavite images and another to saivite and miscellaneous images, in addition to which a selected of images of Natesa or Siva as Lord of the Dance is arranged at the head of the stairs.

Coins

The Chennai Museum is noted for its large and unique collection of coins, particularly of South Indian and Moghul coins. The Gupta coins are specially interesting, being mostly of gold and bearing inscriptions in classical Sanskrit which appear for the first time on Indian coinage. A very rare find acquired by the Chennai Museum was a hoard from Dowlaishwaram, a place near Rajahmundry, consisting of 127 gold coins, 49 of which belong to the Eastern Chalukyan ruler, Raja Raja I and the rest to his son Kulothunga Chola. This section has also a good collection of historical documents, seals and medals. A Numismatic Gallery was opened in 1975 in a room on the first floor of the Bronze Gallery. For reasons of security, only metal casts of important coins have been displayed. A few medals, seals and documents are also on show.

This Museum was also the first to organise a Philatelic Gallery, which has a collection of more than 45,000 stamps from all over the world.

8.CONCLUSION:

From this internship program was most useful for us since we learnt so many things as practically we learnt how to estampage the inscription. And theoretically we learnt about different scripts used in Indian sub continent. From their teaching how to conserve and preserve the coins and Monuments. Apart from that we were taken to the Egmore Museum where we saw Pre Historic, Proto Historic, Anthropology, Geological, Biological,Bronze gallery, Numismatics, Painting and Cave Paintings Sculptures. Several documentaries were telecasted. Especially a documentary on Gudiyum caves by Mr. Ramesh Yanthra. For sure we acknowledge the entirr staff members and the team of experts from the State Archaeology Departemnt of Tamil Nadu. For their tireless help that made this tedious work possible. Lastly, this programme helped us to expose our knowledge acquired in classroom studies and to learn scientific techniques that are more significant in our future studies.