Chapter VI

Early Historic Archaeology of Amaravathi River Valley

Tamil Nadu witnessed different cultural stages with varied degrees of cultural transformation. This cultural change is not uniform throughout the landscape. For instance, majority of Lower, Middle and Upper Palaeolithic sites were concentrated in Palar valley with negligible presence in Pennaiyar valley at Varattanapalli and Kappalavadi (Rajan 1997:156-167) (Fig. 6.1). The presence of this culture is now further traced down to Kaveri valley (Ramji 2006) (Fig. 6.2-3). The discovery of Palaeolithic tools at Vilankudi and Kilakolattur could be cited as an example. V.Selvakumar reported the presence of middle Palaeolithic tools in his recent excavations at Pillayarpatti and its surroundings near Thanjavur (Selvakumar 2011:164-166). At Thirutangal, south of Madurai also such evidences were reported by Balachandran. Thus, the possibility of getting few more sites in southern Tamil Nadu is promising. The lack of goal specific explorations is still eluding us in understanding Palaeolithic culture of Tamil Nadu. Unlike Palaeolithic culture, the occurrence of microlithic tools is noticed throughout Tamil Nadu. Earlier, it is widely believed that the coastal Tamil Nadu does not carry any such microlithic tools. The discoveries of such tools were reported recently in Kaveri deltaic region and Vaigai river valley (Fig. 6.4). However, a particular culture is more visible in certain pockets due to various factors. The factors like availability of raw material and the capacity to transform the resource to their advantage by adopting a suitable technology and other such sustainable factors played a dominant role. The limited explorations and excavations in potential archaeological zones prevented us in getting a complete picture on cultural transformation. The available material evidence in Tamil Nadu, however, suggests that there is a certain degree of cultural homogeneity witnessed during Iron Age. The usage of black and red ware, russet coated ware, particularly iron implements, silver, copper and bronze objects, beads of semi-precious stones, graffiti marks and veneration of the dead by raising sepulchral monuments express cultural homogeneity with some variation. Such cultural variation could be seen even today. Irrespective of these peculiarities confined to certain micro zones, there is an
underlying conformity in cultural expressions. Such cultural uniformity could be seen from Iron Age onwards in Tamil Nadu.

The cultural transformation from Iron Age to Early Historic is very complex and difficult to comprehend the issues to our satisfaction. Still an attempt is made to understand the Early Historic period of Amaravathi river valley. The emergence of Early Historic period is not uniform throughout Tamil Nadu. The beginning of Early Historic is still a matter of debate. The historians, linguistics, epigraphists, numismatics and archaeologists are making an effort to understand this scenario based on the historical data retrieved from their own source of study. These diverse and complex primary sources are still restricting the scholars to come to a definite date. The availability of the deciphered written document is considered as the beginning of history. The occurrence of Tamil-Brahmi script is generally considered as the beginning of Early Historic in Tamil Nadu. Therefore, the date of Tamil-Brahmi has become very crucial to understand the beginning of Early Historic in Tamil Nadu. The historical inputs received from these Tamil-Brahmi script based data (like inscriptions, coins and inscribed potsherds) are considered as the chronological anchor. The Tamil-Brahmi inscriptions noticed at Pugalur (near Karur) and Arachchalur (Fig. 6.5), the inscribed coins and rings collected from Amaravathi river bed, inscribed potsherds collected at Karur and Porunthal clearly point to their cultural transformation from Iron Age to Early Historic. There is hardly any cultural break noticed in any one of the sites excavated in this region. The appearance of script along with so many other social parameters like the usage of coins, formation of trade routes, the size of the settlement, the formation of various clan groups, and the emergence of state are the products of the previous culture that flourished before the Early Historic times. The usage of the term Early Historic in archaeological context is not uniform and in several occasion it has been used loosely. There is no unanimity among the archaeologists in designating a cultural phase as Early Historic. The term Early Historic is substituted with the terms like Black-and-Red ware culture, Early Historic and Historic.

The occurrence of bronze objects and beads of carnelian, agate, steatite, lapis lazuli in Iron Age context well before the traces of NBP and Punch-Marked coins suggest that Tamil Nadu had long distance trade well before the so called Maryann incursion in Kamataka. Besides Kodumanal, the recent excavations like at Modur in
Dharmpuri district, Perur in Coimbatore district, Alagankulam in Ramanathapuram district, Mangudi in Virudhunagar district, Nedungur in Karur district, Thandikudi and Porunthal in Dindigul district and other similar sites provide a clue to the emergence Early Historic phase in 3rd century BC. The reason for assigning all the sites to 3rd century BC or after is with the assumption that the script is introduced in Tamil Nadu after Asoka. In Tamil Nadu, the script is found on stone, metal objects like gold, silver and copper, coins and on ceramics. It would have been written on other perishable materials like palm leaves but evidence is lacking. Tamil-Brahmi script is found in capital cities, port towns, trade centres and in prominent villages mentioned in the Sangam literature. The availability of script even in the remote insignificant village sites like at Mayiladumparai, Pulimankombai, Thathapatti and Teriruveli advocates that this script is widely used in the society. However, there are certain contextual variations in the usage of language. For instance all the cave inscriptions, so far found, are dedicated to Jains. Therefore, the Prakrit words were frequently used in these inscriptions and some of the Prakrit words were tamilised. Such linguistic dominations are rare in other evidences. The inscribed memorial stones of Pulimankombai and Thathapatti were raised for the heroes died in cattle raid (Fig. 6.8). Most of the inscribed potsherds, coins and rings carry the personal name of the issuer or possessor. So, one hardly get any religious connotations in these label inscriptions. It is generally secular in nature.

Under these circumstances, an attempt is made here to analyse the data of Amaravathi river valley. The limited explorations and excavations prevented us to give a clear picture on the entire segment of the evidence. However, an attempt is made to place all the available data related to Early Historic phase of Amaravathi river valley for the ‘scholars’ scrutiny.

Graffiti

The existence of inter and intra cultural interactions between the regions could be seen from Harappan times to Early Historic times. These cultural interactions are reflected in the form of ceramics like black-and-red ware (Fig. 6.9), black-on-red ware, russet coated ware (Fig. 6.10), Northern Black Polished ware and rouletted ware, metal objects like copper and gold and beads of carnelian, agate, steatite and lapis lazuli. Besides, there is tangible evidence of writing material found in the form
pre-firing and post firing graffiti marks. These graffiti marks served as a basis for understanding the emergence of script in India. These graffiti marks are found in the above said cultural context with striking similarities. The study of these graffiti marks may help us to understand the evolution of script in India. Though it is a very complex issue at the present state of knowledge, it is worth pursuing.

Graffiti mostly on potsherds started occurring from Harappan times and continued through the Chalcolithic, Iron Age and Early Historic phases. Attention to these marks was drawn as early as 1881 by Branfill (1881:1-12). Since then scholars like Yazdani (1917:56-79), Hunt (1929:14-150), Wheeler (1948:188-194), Thapar (1957:86-88), Seshadri (1971), Sundara (1975), Lal (1962:4-24) and Rajan (1991:47-54; 2002:97-105) made a modest attempt to understand these marks. Unlike in the north, graffiti marks found in Tamil Nadu are wide spread and almost uniform in character. Excluding the fragmentary signs, there are hundreds of signs in which some are found to be compound signs consisting of more than one symbol. Some signs are evolved from a basic sign and some always occupy at the end of the compound sign (Rajan 1991:47-54).

It is quite interesting to observe the contextual position of graffiti in Tamil Nadu. They are found in different media like metal, stone and pottery. They were observed in pre- Brahmi and in Brahmi level. B.B.Lal traced these graffiti marks to Harappan times passing through central Chalcolithic period (Lal 1962:4-24). As far as Tamil Nadu is concerned, they were found uniformly throughout the region. All of them were post-firing in nature and mostly written on shoulder portion of the pot. There were written from left to right as suggested by the overlapping scripts and also its position at the end of the personal name written in Tamil-Brahmi script. It is to be emphasised here that the Tamil-Brahmi scripts that are found in the subsequent period were also engraved on shoulder portion only. This indirectly indicates the importance given to the graffiti in the society. In the second stage, they were found in association with the Tamil-Brahmi script but mostly marked at the end of the word. This phenomenon is observed in all media. At Karur they were found at the end of the personal name engraved on rings (Fig. 6.11-13), bangles and on potsherds. Such evidences were also repeated on ceramics in the sites like at Kodumanal, Porunthal, and Marungur (Fig. 6. 14-17).
It is quite interesting to observe that at Anaikottai in Jaffna peninsula of Sri Lanka a seal was discovered with two lines of engravings (Raghupathy 1987:200-202). The bottom line had three scripts in Tamil-Brahmi and three graffiti marks on the top line. These marks are considered equivalent to Tamil-script that engraved below. The scholars identify them as bi-script of the same language. Identical mark is also noticed recently at Edakkal in Tamil-Brahmi context (Mahadevan 1998:20-29; Raghava Varier 2010:28-37). This mark assumes a greater significance here as it is found after the name Chera, one of the three crowned kingdoms of Tamil Nadu. Identical mark is also found at Kodumanal, Vallam, Karur and Sanur. At Karur quite a number of graffiti marks were recently brought to light on rings, bangles, ceramics and coins (Seetharaman 1994:86-87). A symbol found on a potsherd at Kodumanal is repeated on a Punch-Marked coin and in Tamil-Brahmi cave inscriptions at Kongarpuliyankulam and Alagarmalai (Fig. 6.18) (Mahadevan 2003:332-383). According to K. Rajan, these graffiti marks were not potters mark or tribal mark but it had some cultural significance beyond that (Rajan 1997:75-97). Based on Kodumanal evidences he suggested that symbols found in the burial were clan marks but whereas the graffiti found in the habitation still had other meanings. The contextual position of these graffiti marks forced us to consider them as one kind of script. If one considers them as an undeciphered script, then, these marks express the closeness that existed between the communities (Map 23).

The modest comparative study made on graffiti marks of Sri Lanka and Tamil Nadu by K. Rajan and Osmund Bopearachchi shows the striking similarity between these two regions. The non-Brahmi symbols of Sri Lanka find their parallels in Iron Age and Early Historic ceramics of peninsular India. Deraniyagala (1972:46-169) had tabulated some of the graffiti symbols of Sri Lanka. Seneviratne (1984:237-307; 1992: 99-131) made an extensive study of these symbols and identified a few of them as clan or family symbols. The excavations at Kodumanal and at Ridiyagama yielded a large number of potsherds bearing graffiti (Rajan and Osmund Bopearachchi 2002:98-105). Excluding the fragmentary graffiti, there are about fifty complete or almost complete signs similar to those found at Kodumanal. These post-firing graffiti were found on the neck portion of the vessels, but in the case of ring stands and dishes they were found on the exterior surface of the base and sometimes on the inner side.
also. Most of them were engraved on the shoulder portions of the black and red ware pottery.

The graves at Porunthal also yielded certain type of symbols specific to certain graves, as one observed at Kodumanal (Fig. 5.10; 6.9). The grave Meg-I yielded double line U-shaped jar like symbol on majority of the pots. This symbol is also repeated in another grave Meg-II (Fig 4.77-78). Interestingly, both these graves are larger in size and beautifully constructed. These are transepted cist with passage on the east. The southern chamber of the cist was divided into two or more chambers and had a bench in it. It yielded several important antiquities as stated earlier. This jar symbol is also found at the end of the Tamil-Brahmi script reading va-y-ra engraved on the ring stand (Fig. 4.64). Kodumanal also revealed such scenario. The graves Meg-III, VII, VIII and X at Kodumanal had identical symbol. Four symbols and their variant were noticed in a single grave (Meg-III) at Porunthal. The symbol (no.1) consists of two oblique lines meeting at the top had four or five horizontal parallel lines in the gap between the extreme two oblique lines. It is found engraved on the shoulder portion of the pot (Fig. 6.19). This symbol is also found in association with a star symbol (no.2). The star symbol generally comes at the end of the compound symbol. Such evidence also noticed earlier at Kodumanal. The star symbol is also found as an individual symbol (Fig. 6.20). The symbol (no.1) is also found placed side by side as two symbols. As a variant to the above symbol (no.1), a horizontal line is placed at the top with two small vertical strokes hanging at either end of the horizontal line. This looks like a bullock cart (no.3). A two oblique lines meeting at the top of the central vertical line is also noticed in the same grave (no.4). Thus, Meg-III had four basic symbols repeated in different forms. The reason for showing such variation may be due to the nature of the grave. The grave (Meg-III) is, in fact, a double cist burial. In total four urns (two urns in each cist) were recovered from the grave with skeletal remains. Due to fragile condition of the bones, the exact nature of the skeletal remains could not be ascertained. However, the occurrence of more than a skull clearly points to multiple nature of the grave. Thus, the occurrence of four symbols and its variant may be suggestive of different social groups. The symbol may attribute the relationship that existed between the individuals buried in the particular grave. The relation may suggest either matrimonial relation or some other similar relationship. The grave Meg-IV is similar to Meg-III, both in content and quality. It
yielded four symbols and with two variants totaling six symbols. The symbols (no.3 and no.4) of Meg-III are repeated here. The identical two symbols (no.4) are engraved side by side to form another symbol. The variant of this symbol had six oblique lines meeting at the top. Besides, five horizontal and five vertical lines intersecting each other to form a square grid is noticed on few pots (no.5). Another symbol looks like a bench forming out of two horizontal parallel lines engraved on the top of the four vertical lines. The pair of two vertical lines engraved on the extreme ends of the horizontal line (no.6). Next to this symbol, the symbol (no.4) is repeated. Another identical composite symbol is found in one of the pots. In this symbol, the extreme right oblique line (of symbol no. 4) had a wavy pattern.

Besides, several graffiti marks are noticed on potsherds collected from the disturbed habitation mounds at Porunthal, Thamaraikulam Kotthanur, Karur and Nedungur (Fig. 3.46), in the study region. Large number of graffiti marks comes from Thamaraikulam. The Asokan-Brahmi ma like symbol occurs individually or in composite form. It is found within a jar like symbol. Such evidence is also noticed at Kodumanal. This ma like symbol is more common in the Gadige area of Anuradhapura, Sri Lanka and at Korkai, Tamil Nadu. One vertical line at the centre and two oblique lines on its side meet at a point on the top serve as a basic symbol. This symbol is further elaborated by adding some additional strokes probably indicating different but related meaning to the basic symbol. This symbol too occurs individually or in composite form.

The individual ladder like symbol is found in different forms at Kodumanal. It is found individually as well as in composite form. The symbol swastika is found both individually and in composite form. In both the sites, the arms of the swastika symbol are branched out. The star-like symbol usually occurs at the end of a compound sign. Other symbols like the bifurcated square box, two oblique lines meeting on the top and the tree symbol are common in both sites. Two jars like symbol engraved adjacent to each other and an arrow like symbol are noticed on the shoulder portion of a red ware pot at Thamaraikulam. The excavation at Karur would have also yielded such graffiti marks (Fig. 3.46-47; 4.77-78). The non-availability of the report prevented us for making any comparative study. Thus, the limited symbols recovered from excavations and explorations suggest that these graffiti marks more or less synchronize with symbols of Kodumanal.
The above said information suggests the evidence of strong cultural linkage between different cultural zones. Specific attempts were made to understand these graffiti marks (Lal 1960:4-24; Rajan 1997-75-97). K. Rajan who studied closely on the nature of graffiti marks at Kodumanal arrived to a limited conclusion. His study has been repeated here for better understanding of these marks. The prevailing concepts as to the nature of the pottery-graffiti may be classified as follows:

1. Potter’s marks
2. Owner’s marks
3. Clan marks

The site Kodumanal alone yielded more than fifty symbols and they occur repeatedly in different contexts. If we consider them as a potter’s marks then one has to conceive that there were a large number of potters’ families working at the site and they supplied pottery to the sites beyond their reach. This is rather doubtful. Moreover all the marks are post-firing ones. If they were potter’s marks, they would have easily marked them when the pot was in leather condition.

If we consider them as owner’s mark, then generally one symbol or one set of symbols might have belonged to a particular owner. However, it is found that a symbol or a set of symbols are repeated within a site as well as at different sites in the same period. The finest example could be observed at Porunthal. So, the concept of owner’s mark also stands invalid in the given circumstances. Treating them as clan marks or the marks with other meanings would be the plausible one. In support of this, each burial at Kodumanal and Porunthal had a set of distinct symbols engraved on most of the pots that were placed as grave goods. Of the fifteen burials excavated at Kodumanal, only three (Meg. 4, 6 and 11) did not yield any graffiti on their pottery. However, all the four graves opened at Porunthal had graffiti marks. The fact is that each megalithic burial was associated with a specific symbol engraved on its pottery. It suggests that the particular symbol is somewhat important and is closely related to the person in whose memory that grave was erected. Certain symbols like jar symbol collected from Meg-I and Meg-II of Porunthal denotes some related social group. Such example is also observed at Kodumanal. At Kodumanal, a symbol of four vertical lines hanging from a horizontal line was collected from different cemeteries.
The Kodumanal and Porunthal evidences suggest that these symbols probably denote a clan or a social group. However, the same cannot be applied to the symbols found in habitation. The availability of more than fifty graffiti symbols in the habitation refrain us denoting them as clan symbol. Within the limited excavations one cannot expect fifty clan groups. Therefore, the graffiti marks in graves may be considered as clan symbol whereas the large number of symbols found in habitation had additional meanings. Such symbols are repeated at several places in different cultural context and on different media. These graffiti marks could be a script, still one needs a strong evidence to place them convincingly in the domain of script. To understand the true meaning that stands behind these signs and the proper linkage between the scripts and the graffiti marks requires extensive explorations and excavations.

**Tamil-Brahmi**

One of the earliest satisfactorily deciphered scripts in India is Brahmi script. All other earlier Indian scripts like Indus script and graffiti marks are yet to be deciphered though there are some claims on the nature of the script. In Tamil Nadu, the earliest available deciphered script, next to graffiti, is Tamil-Brahmi script. In Tamil Nadu, the availability of the Tamil-Brahmi inscription is widespread and it is found on different non-perishable media like stone, coins, seals and potsherds (Fig. 6.5-6; 6.12-14). The content of the cave inscriptions is generally attributed to Jains. The discovery of the inscription at Mangulam by Robert Sewell in 1882 and subsequent satisfactory decipherment in 1924 by K.V.Subrahmanya Aiyer (1924:275-300) opened a new area of research in Tamil Nadu. However, the recent discovery of Tamil-Brahmi inscribed memorial stones at Pulimankombai and Thathapatti in mid-Vaigai river valley throw light on the secular character of the inscriptions. The four memorial stone inscriptions were raised for the heroes who died in cattle raid. One of the inscriptions of Pulimankombai is considered to be earlier to Mangulam inscription (Fig. 6.6-8) (Rajan, K, Yathees Kumar V.P, Selvakumar S., 2007:118-121).

If one sees the characteristic features of Tamil-Brahmi, inscriptions and Prakrit-Brahmi inscriptions of India and Sri Lanka, close relations could be witnessed between Tamil-Brahmi and Prakrit-Brahmi of Sri Lanka. The Brahmi letters representing Prakrit language in Tamil Nadu are more akin to the one found in Sri Lanka rather than to Asokan-Brahmi inscriptions. It shows the close cultural contact.
between Sri Lanka and Tamil Nadu. If one considers the geographical proximity, it is quite natural. Mahadevan feels that Brahmi scripts have been introduced in Tamil Nadu in 2\textsuperscript{nd} century BC and Tamils developed certain scripts to suit the Tamil language. However, scholars like K.V.Ramesh, M.D.Sampath, K.G.Krishnan, K.V.Raman (1976:64-65), S.Rajavelu and others differ from I.Mahadevan and push the date of Tamil-Brahmi inscription a century earlier or more (Map. 24).

**Chronology**

The Prakrit-Brahmi and Tamil-Brahmi inscriptions do not show any wider chronological gap that led to constant debate such as whether it moved from north to south or vice versa. In recent years, Sri Lankan scholars claim on the basis of Anuradhapura evidence that Brahmi script was developed in Sri Lanka and moved from there to India through Tamil Nadu. All these contradictions persist due to the availability of Brahmi script within a short period of time throughout Indian sub-continent. Scholars agree that these scripts would not have got such pan-Indian plane within a short time. But evidences are lacking credibly to prove this hypothesis. All the early inscriptions look alike and contemporaneous in nature and it is very difficult to convincingly and chronologically differentiate them.

The inscriptions of Asokan times were predominantly written on stone and Buddhist in character. Unlike Asokan inscriptions, Tamil-Brahmi scripts were found on stone, potsherds, seals, coins and rings. Among them, the scripts engraved on stone and potsherds predominate. They were found uniformly throughout Tamil Nadu thereby showing its wider application. There is hardly any definite clue on the historical date in these inscriptions except the name of the kings. This situation prevented to place them in any chronological anchor. The chronology of these inscriptions is fixed based on archaeological stratigraphy, palaeography, linguistic style, social structure, name of the ruler, geographical position and on the relationship between the literature and inscriptions. However, there is a common view among the scholars that this script was used in Tamil Nadu between of 3\textsuperscript{rd} – 2\textsuperscript{nd} BC to 3\textsuperscript{rd} cent. AD with varied degree of evolution.

Thus, an attempt is made here to analyse Tamil-Brahmi inscriptions encountered in the study area. In Tamil Nadu, almost all recently excavated sites with early historic cultural phase yielded Tamil-Brahmi inscribed potsherds. Due to the
impact of this script, archaeological sites yielding early historic cultural deposit invariably is dated between 3rd century BC and 3rd cent. AD. The fine examples are Uraiur, Teriuveli, Mangudi, Kodumanal, Korkai, Karur, Vallam, Tirukampuliyur, Alagankulam and host of other sites. Nearly 204 Tamil-Brahmi inscribed potsherds (172 by the Tamil University and remaining 32 by the State Archaeology Department) in the six seasons of the excavations at Kodumanal have been recovered which constitute less than 1% of the excavated area. This is not unique to Kodumanal alone, this state of affairs also repeated in other sites like at Karur, the capital of Cheras.

Nearly 300 inscribed potsherds were unearthed in sixteen archaeological sites throughout Tamil Nadu with a high degree of uniformity. It proves that different strata of the society, both rural and urban, engraved with Tamil-Brahmi script. The occurrence of Tamil-Brahmi inscriptions at Pugalur (Chera) and Mangulam (Pandya) (Mahadevan 1968:57-73) and the portrait coins with king’s name like Peruvaluti, Kolliporai, Makotai and Kuttuvan Kotai (Krishnamurthy 1997: 23) clearly denote the emergence of state in Tamil country.

In the study area, the inscriptions are noticed on coins, seals, rings, potsherds and in rock shelters revealing the social, cultural, economic and political dimensions of the society. However, a word of caution is required at this juncture. Barring the cave inscriptions and inscribed potsherds, majority of the findings particularly the coins, seals and rings were reported from a single site Karur, that too from a river bed. The finders of these objects claim that these were dropped in Amaravathi river as a ritual practice. This dimension could not be fully understood owing to the negligible occurrence of such objects in excavations. This phenomenon is rather disturbing to understand them in archaeological context. For instance, the site Kodumanal yielded the maximum number of inscribed potsherds. However, it failed to yield any inscribed coin, seal or ring in archaeological stratigraphy, though this place is considered as one of the industrial production centres for gem stones and steel. Keeping these factors in mind, the findings are analysed here.

The inscribed potsherds were unearthed at two places namely Karur and Porunthal. The Karur findings are neither published nor available for analysis. However, one may draw some information from sporadic reports. Except for that of a sherd with letters inscribed over a red slipped ware, all other sherds were found to be
inscribed on black-and-red ware. Some of sherds had words like catan, kati, irkup and kuruakal (Fig.13). The excavator assigned it to 2-3rd cent. AD on the basis of the evolved character of the letters.

The available inscribed ring stand collected from a grave at Porunthal provided some clue on the chronological dimension of the period under study. As discussed in chapter IV, one of the red slipped ring stands placed as a grave good in the northern chamber of the transepted cist (Meg.-1) had a Tamil-Brahmi inscription reading va-y-ra. Of the four symbols, the first three marks were Tamil-Brahmi scripts reading va-y-ra (Fig. 4.64). These were smaller in size when compare with the fourth graffiti engraved next to these three scripts. The last symbol is identical to the one, both in size and shape that were found in most of the pots placed as grave goods in this grave. The fifth symbol engraved on the opposite side of the ring stand was identical to the fourth symbol. In addition to these, identical ring stand with Tamil-Brahmi inscription reading va-y-ra also recovered from southern chamber of the same grave. The Tamil-Brahmi script, graffiti marks, cameoian beads, an iron sword and an arrow head found in association with ring stand clearly points to the importance given by them. This ring stand was placed close to human bone pieces placed over the broken legged jar. The contextual position of the ring stand clearly points to its importance.

Among the early historic sites of this valley two excavated sites namely Karur and Porunthal yielded considerable data on the nature of Early Historic times. The first one is a celebrated capital city of Cheras and the second one is an industrial production centre. When compared with Porunthal, Karur and its sub-urban site Pugalur yielded maximum number of inscribed objects. The significance of the Porunthal excavation is explained in previous chapters. A brief discussion on Karur would provide good picture on the nature of society that existed during early Historic times.

Next to inscribed potsherds, the major epigraphical evidence witnessed in the study area is the Pugalur Tamil-Brahmi inscriptions (Fig. 21-22). Before the discovery of Pugalur inscriptions, the Sangam literature Padirruppattu is the only literary source exclusively dealing on Chera lineage. It consists of hundred poems divided into ten parts. The first ten and the last ten are lost. However, the available
poems are of great help to reassess and revalidate the historicity of the Pugalur records more particularly the genealogy of the Cheras. The surviving collection of eighty poems represents two ruling Chera families namely Udiyan and Antuvan. The former was the senior line to rule from Vanji, while the later belonged to Irumporai line who ruled from Karur.

The second ten and the third ten are devoted to the two sons of Udiyan-Cheralathan namely Kudakko-Imayavaranban-Nedun-Cheralathan and Palyanai-Celkelu-Kuttuvan. The fourth, fifth and the sixth ten belongs to Kalangkai-narmudi-Cheral, Kadalpirakkottiya-Senguttuvan and Adukotpattu-Cheralathan. The seventh, eighth and ninth ten refer to Irumporai family namely Selvakadungo-Valiathan, Peruncheral-Irumporai and Ilancheral-Irumporai. The first and the last ten are not available but believed to be composed in praise of Udiyan-Cheralathan and Yanaikkat-Mantaram-Cheral-Irumporai.

The first and foremost concrete evidence apart from the above mentioned works, about the Cheras as a separate political entity, is gleaned from Asokan records. These records serve as a datum line to ascertain the chronology of the so called kingdoms of the south. The second and the thirteenth rock edicts of Asoka refer to the independent kingdoms that existed beyond his empire. Among them, the names such as Codas, Padas, Ketalaputo and Satiyaputo are taken to refer the kingdoms ruling over parts of Tamil Nadu. The names Codas, Padas, Ketalaputo and Satiyaputo are equated with the Cholas, Pandyas, Cheras and Adiyamans of Tagadur. These records are helpful in a way to push the antiquity of these kingdoms to c.3rd cent BC. None of the Tamil-Brahmi inscription particularly Mangulam, Pugalur and Jambai inscriptions express the dynastic name of the kingdoms. The dynastic name Chera is heard for the first time in the Edakkal record (Mahadevan 2003: 432-433)

The Pugalur record is unique as it provides names of three kings in genealogical order. These records, twelve in number, were first noticed in the year 1927 by the Epigraphy Branch of the Archaeological Survey of India and only a brief note is provided in the Annual Report on Epigraphy (Nos.296B to 349 of 1927-28). The first correct reading of these records was made by I. Mahadevan in the year 1966. For the first time, an attempt was made to identify these kings with those of the Chera kings mentioned in Padirruppattu. Yet another attempt was made by Panneerselvam
(Krishnan 1981:24) in identifying the kings at the same conference. Thereafter, these records became the subject matter at the hands of many scholars over the years.

As mentioned earlier, these Tamil-Brahmi records, twelve in number, are engraved in the two natural caverns of the hillock called Arunattarmalai located amidst the village of Velayudhampalayam about 15 km southwest of Karur. The northern cavern (Soodamani kunru) engraved with inscriptions at the face of the cavern and also along the stone beds. The cavern in the south has more number of stone beds than the earlier.

Of the twelve records found from both the caverns those in the southern spot is of particular interest. The first two records engraved on the overhanging rock surface mention the names of three Chera kings who believed to have ruled successively. The record reads that the beds were caused to be made by Ilan-Kadungo son of Perung-Kadungo who was the son of Cellirumporai for the stay of Seng-Kaypan of Yarrur.

The fifth and the sixth records refer to the donation by a lady named Kiran korri the daughter of Pitantai. She belonged to the village of Nalliyur. The seventh record is damaged at the end and gives the personal name Korrantai (i) lava (n) probably a donor of the bed. The ninth record is highly interesting to contain the earliest lithic reference for the city of Karur. The person Nandi who belonged to Karuvur is referred to as a merchant dealing with gold (Karuvur-pon-vanikan). The next one also records a similar gift, this time by oil merchant (Ennai-vanikan) named Veni-tan. The last record is damaged at the beginning and again mentions a personal name of Perumkiran son of Nagan(?).

Mahadevan’s identification of the kings with the second set of Chera lineage received a special attention and majority of the scholars are quite convinced with the identification (Mahadevan 2003:117-118). Taking the title porai occurring as a suffix at the end of the name, Mahadevan identified the three persons figuring in the records with the three generations of Chera kings coming from lineage of Poraiyar. They are as follows.

(1) Koatan Cel Irumporai - Anduvan-Cheral Irumporai
(2) Perum-Kadungon - Celva-k-kadungo-Vaziyan
(3) Ilan-Kadungo - Ilan-Cheral-Irumporai
Panneerselvam on the basis of adjectival terms perum and ilam found in both sets of names proposed the three kings with Celva-k-kadungo-Vaziyathan, Perum-Cheral-Irumporai and Ilan-Cheral-Irumporai (Krishnan 1981:25). Mylai Seeni Venkatasami proposes a fresh identification of the kings with two persons who are mentioned in the verses of Purananuru and Akananuru. They are the Palai-padiya Perun-Kadungo (Perun-Kadungo who composed poems on the subject of palai) and marudam padiya Ilankadungo (Ilan-Kadungo who composed poems on the subject of marudam) could be the same persons of the Pugalur records mentioned as father and son (Venkadasami 2001:150-155)

K.G. Krishnan who reviewed these records proposes another version of the Chera kings (Krishnan 1981:26-27). He insists that the epithets form an integral part of the personal names which is the only mode to distinguish the difference between the two. Krishnan derives the following personal names as Atan (Ko-Atan-Cell-Irumporai), Kadungon (Perun-Kadungon) and Kadungon (Ilan-Kadungon) and correlate with the personal names of Celva-k-Kadungo-Vaziyathan (Atan), Perun-Cheral-Irumporai and Ilan-Cheral-Irumporai. With the help of these personal names he traces a new genealogical order of the three kings as Atan (Celva-k-Kadungo), Kuttuvan (Perun-Cheral-Irumporai) and Ilan-Cheral-Irumporai (personal name not available) and altogether says that these two inscriptions mention three kings not known to Padirruppattu. He also proposes the same view of Venkatasami to the identification of palai padiya Perun-kadungo and marudam padiya Perun-Kadungo for the Pugalur records, but admits for the lack of evidence to establish it. On palaeographical grounds and the development of the letters scholars assign the date of the records to 2nd - 3rd cent. A.D. The excavations at Karur on the other hand help to fix the date of these records. The site has yielded inscribed pot sherds identical to the cave inscriptions at the levels datable to 1st cent. A.D. Hence, the excavator fixes the date of Pugalur records on par with the inscribed sherds or little earlier. Irrespective of these complex issues, literary, archaeological, epigraphical and numismatic evidence clearly points to the existence of the state at Karur in early part of the Christian era.

**Numismatic Studies**

The numismatic study in South India (old Madras Presidency) begins with the discovery of Roman and Punch-Marked coins at Nellur in around 1786 (Davidson
In Tamil Nadu, it begins with discovery of a pot containing Roman coins of Augustus and Tiberius at Pattali near Pollachi in 1800 by Buchanan (Buchanam 1807:318-319). In 1806, Roman coins issued during the regime of Augustus, Tiberius, Antonia and Claudius were reported at Karur (Elliot 1844:121-214; Bidie 1874:1; Walhouse 1876:327-329; Sewell 1882:221; Little; Thurston1883:338; Schulman: 1928:199). Elliot reported on the occurrence of a large hoard of Punch-Marked coins in 1807 collected from a dolmen at Chavadi palpalam about 9 km south of Palladam (Elliot 1844:227-228; Little 1883:237; Allan 193). In 1817, a silver coin of Augustus was unearthed from a cist in Coimbatore (IA., Vol. II pp. 241, 242). In 1842, an earthen pot containing 522 Roman Dinari was dug up at Vellanur a small village 10 km south of Coimbatore (Bird 1843:294-295; Anon 1843-1844:111-112; Elliot 1844:212-214). Punch-Marked coin was reported at Tiruppur in 1843 (Little 1883:237). In 1847, Roman coins were discovered in Udhagamandalam (Congreve: 1847:92; Sewell 1882:226; Little 1883:337; Thurston 1888:9-15). These chance discoveries were consolidated and Caldwell wrote a small book on Roman coins called Roman Imperial Aurei in 1851 after fifty years of first discovery.

Sir Walter Elliot first published his findings in the Madras Journal of Literature and Science in 1857-59 and again published a catalogue in 1874 on gold coins of the Madras Museum while he was a Superintendent of the Museum (Elliot 1856-57: 157-158). Five Roman silver coins were reported from Akilandapuram in 1876 (Turnur1989:47-48). In 1878, Rev. Little also discovered a hoard of 500 coins in this area. G.Bidie published the coins of Gajapathi, Vijayanagara and Pagoda type of coins of East India Company in 1883 (Bidie 1883:33). However, it is generally believed that the real numismatic studies in Tamil Nadu begin on the later part of the nineteenth century with the publication of the book Coins of Southern India by Sir Walter Elliot in 1886 (Elliot 1885-86). He published the coins of medieval Cholas, Pandyas and Pallavas with good illustrations and explanations, which stands as a source book till date. In continuation of the Elliot work, Tufnell wrote On a Collection of South India Coins in 1887 (Tufnell 1887:157-160). J.E.Tracey, Loventhal, T.M.Rangachariar and E.Hultzsch respectively brought to light on the nature of Pandya coins (Tracey 1887-89:138-160), Pandya coins collected from Tirunelveli (Loventhal 1888), Danish coins (Rangachariar and Desikachari 1888-89) and South Indian Copper Coins (Hultzsh 1896 317-323).
The works of above scholars accelerated numismatic studies in Tamil Nadu particularly in the beginning of the 20th century. Among the scholars, Desikachari has done a yeomen service to the numismatic studies. T. Desikachari took a keen interest in this study and he brought to light many coins in Tamilian Antiquary, a journal published in Tiruchirapalli (Desikachari 1911:1-16; 1913:99-109; 1913: 1-11; 1914:1-19; 1916:33). In 1912 Roman coins and Punch-Marked coins were discovered at Kattanganni near Kangayam, 62 km east of Coimbatore (MMAR 1912-1913:4; ASI Western Circle, Progress Report 1915: 31, 36; Botham and R. Friel 1919:358-359; Turner 1989:60). Pot containing 63 gold coins of early Roman Emperors Augustus and others, was discovered at Kalayamputtur, 5 km west Palani near the river Sanmugenadi (Porunthalar). Nearly 57 coins were in excellent state of preservation (Sewell 1882:286; Turner 1989). In 1930, Punch-Marked coins were reported at Sulur (Beck 1930: 166-182). Budhinattam, located 10 km from Udumalaipettai, reported with 1398 Roman silver coins (Fig. 3.94) (MMAR 1946-47:1-8; Turner 1989:50).

Nearly fifty years of Desikachari’s research has been culminated with the publication of a book South Indian Coins in 1933 (Desikachari 1933). After Desikachari, numismatic study slowed down without much impact, as due to the legislation large quantity of coins particularly as a hoard went into the vaults of the Madras Government Museum. These coins are listed and catalogued but not properly analyzed and published, irrespective of the appointment of the curator exclusively for numismatic studies at Madras Government Museum. This sluggishness was slowly removed with the interest of T. G. Aravamudhan who brought out the Catalogue of Venitian Coins in Madras Government Museum (Aravamudhan 1938). He also published, after a decade, a book on Punch-Marked coins (Aravamudhan 1948). Thirty silver Punch-Marked coins were found at Alapalayam in Dharapuram taluk in 1949 (Vaidyanathan 1983:236).

In the middle of the 20th century, the studies turned into a productive side. D.D. Kosambi analyzed extensively on various factors on the coin hoard recovered from the ancient trade route at Bodinayakanaur in Tamil Nadu (Kosambi 1951:214-218). P.L. Gupta who made a remarkable impact in numismatic studies listed the Punch-Marked coins collected from various sites of Tamil Nadu (Gupta 1955:15-19) and then he compared these Punch-Marked coins with the one found in Kerala (Gupta: 1965: 15-19). R. Vanaja, in her M.Litt thesis, analyzed the collection of the
Punch-Marked coins in Madras Museum (Vanaja 1955). Vakkampalayam in Pollachi taluk reported 48 coins in 1961 (Vaidyanathan 1983:236). Tayirpalayam in Erode district yielded 193 coins in 1962 (Vaidyanathan 1983:236). These studies brought to light the independent issue of the Punch-Marked coins by the one of the Sangam Age kingdoms namely Pandya. These publications turned the eye of the learned scholars on Tamil coins. C.H. Biddulph published the coins of Pandyas (Biddulph 1966) and Cholas (Biddulph 1968) with the help of Numismatic Society of India. These two books are the first publication exclusively on dynastic line. B. Chattopadhyaya book on Coins and Currency Systems in South India is the one deal comprehensively on the economic value of the coins (Chattopadhyaya 1977).

R. Nagasamy, former Director of the State Archaeology Department, gave new dimension to the study of South Indian coins by bringing the bilingual coin found on Satavahana king Vasistiputra Siva Sri Pulamavi to the notice of the scholars. This bilingual coin had greater impact in the political history of Tamil Nadu (Nagasamy 1968:200-202; 1981:200-202; 1985:105-113). His book on Tamil Coins - A Study provides glimpse on the latest discoveries both from excavations and explorations. R. Nagasamy is the first who brought to the notice of the scholars on the inscribed coins of the Sangam Age Chera king Kolliporai in 1987. His discovery turned the attention of scholars towards Sangam Age coins. Another Chera king Makkotai coin was brought to light by R. Krishnamurthy in 1990 (Krishnamurthy 1992:89-93). Now, quite a number of Sangam Age coins, particularly of the Pandyas and Cheras were brought to light (Map. 25).

In 1987, R. Krishnamurthy reported Sangam period Chera Coins in Karur (Krishnamurthy 1987 36-38) (Fig.6.23-24). Turner Paula reported a Roman coin in 1989 (Turner 1989:58) (Fig. 6.25). In 1992, R. Krishnamurthy reported a makkothai coin in Karur (Krishnamurthy 1992:89-93) (Fig. 6.26-27). 1994, Seetharaman reported a copper ring with graffiti marks from Karur (Seetharaman 1994:86-87). In 2001, P. Vijayaraghavan reported a silver Punch-Marked coin from Karur (Fig.6.28).

All the above said discoveries could be placed under three categories. The first category goes as chance discovery of coin hoards. The second one comes from Iron Age graves. The last category falls under purchase made at Karur. These purchases were made on the banks of river Amaravathi. Some of the coins found elsewhere
were also reported as coins of Karur. Though several sites were excavated in Kongu region, only three sites namely Kodumanal, Karur and Porunthal were reported with coins. The stratified occurrence of a square copper coin with an elephant on the obverse and bow and arrow on the reverse at Karur deserves to be mentioned. The coin with such symbols indicating the royal insignia of the Cheras was the first of its kind to occur at Karur in a stratified context. A highly corroded silver Roman coin found in the upper levels (0.52 m) perhaps indicate the survival of external trade activities. The occurrence of imported pottery, inscribed shreds and coins on the whole was dated to 1st-2nd AD. The site Kodumanal yielded two silver Punch-Marked coins. One was reported from an archaeological stratum and the remaining one came from a surface collection (Rajan 1997:75-97). A copper coin was collected from an excavated trench at Porunthal near Palani (Fig. 6.29) (Rajan 2009). Barring these coins, several coins were reported in non-stratified contest that one finds difficult to place them in proper cultural context.

In recent years the coin collectors of Tamil Nadu played a greater role in numismatics studied. They brought to light hitherto unknown coins which are politically and economically important. Some of the coin collectors published their findings and their scholarly publications received the attention. Among them, R.Krishnamurthy, S.Ramayya, Alakkudi Seetharaman, Sankara Raman, Thirugnasambandam and host of others stand as testimony for such studies. R.Krishnamurthy made a greater impact in numismatics studies through his discoveries and scholarly articles. R.Krishnamurthy published series of books on his discoveries. Among them, coins of Sangam Age Cholas, Peruvaluti and Malaiyaman need a special attention. His work on Sangam Age Coins needs a special attention in the studies of numismatic history of Tamil Nadu (Krishnamurthy 1997:7-10). He also focused on Roman and non-Roman issues in his book Late Roman Copper Coins from South India, Karur and Madurai (1994) and Non-Roman Ancient Foreign Coins from Karur in Tamil Nadu (2000). Besides he published many articles of historical value. Among them, the articles on the coins of Pallavas (1988:33-34; 1988:35-36; 1989:90-92; 1991:62-63) and Chera king Makkotai (1992:89-93) deserve special mention. S.Ramayya's work on Coins of Kalabhras is important. His findings gave a new dimension to the Kalabhara dynasty which is considered as interregnum among the scholars. Alakkudi Seetharaman also made his contribution
considerably on the coins of Sangam Age (Seetharaman 1994; 2000, 2002). In association with Sankararaman, he brought out the coins of Pallavas and Nayakas (Seetharaman and Sankararaman 2002). K.A. Thirugnasambandam contribution on Pallava coins needs an attention (1989).

Natana Kasinathan, former Director of the State Archaeology Department, also turned his attention on coins. Like his predecessor R.Nagasamy, he also published coins recovered in archaeological excavations. His works on Andipatti coins (1992), and Roman coins (1993) provided additional information on existing scenario. His recent book Tamilar kasu Iyal (Tamil Coins) contains the information on recent discoveries (Kasinathan 2003).

The studies on Roman coins received the special attention of both Indian and foreign scholars. Among them, the works of Paula J.Turner (1989), Peter Berghaus (1991), Mac Dowall (1991), K.V.Raman (1992), Michael Mitchiner (1995; 1998), P.V.Radhakrishnan (1999) and S.Suresh (1992) provided a base for the study of different aspects.

Recently K.Ganesh focused on the coins issued between 9th and 18th century in his book on The Coins of Tamil Nadu (2002). The book on the Studies of the Sangam Age Coins by P.Shanmugam (2003) is the latest in the studies on the Sangam Age. He complied all the previous work in meticulous manner and highlighted the importance of these coins. This is one of the latest publications that deals on the historiography of the numismatic studies. M.Bavani's (M.Phil) thesis, probably the only thesis of recent years, exclusively deals on Sangam Age coins.

In these publications, Karur has carved a niche of its own than any other places in Tamil Nadu. The antiquities collected from Amaravathi river bed are unique and unparallel. The quench for the collection of coins at Karur started as early as 1806 when a few Roman coins belonging to Augustus and Claudius were collected from the river bed of Amaravathi. Since then it opened the flood gate for many individuals who tried their best, in searching the root cause for Roman contact with this place.

The discoveries of inscribed coins identified with Chera kings are highly useful in determining the rule of Cheras at Karur. Apart from the coins, there is yet another set of finds namely inscribed seals and rings which throw valuable light about
high ranked individuals who are hitherto unknown from other sources. Since the numismatic evidences are beyond the scope of the work and only those objects and coins that are related to the study have been dealt with. The varied nature of their finds could be classified as follows.

1. Punch-Marked coins.
2. Uninscribed Chera coins.
3. Inscribed Chera coins.
4. Roman coins.
5. Inscribed seals and rings.

The first variety is limited to occasional stray finds. It is not clear whether these coins were issued locally or reached this place through trade. The specimens identified by Nagasamy bears different symbols namely sun, bull, arrow, turtles etc. (Nagasamy 1996:28). In addition to this, there is yet another type of copper coins believed to have been imitated with multiple symbols punched on it. In most of the cases the obverse of this coin type bears elephant figure and the reverse with bow and arrow in different styles. Sometimes, the elephant is replaced by horse symbol.

The third variety namely the Tamil-Brahmi inscribed coins, next to lithic records provide the direct evidence about the collateral branch of the Cheras. So far two types of inscribed coins were identified with short labels reading the names of the kings. The first type a circular coin was brought to light by Nagasamy with inscribed legend (Nagasamy 1996:9-10). On the obverse a human figure identified as the king is shown in standing posture under an arch holding a sword and shield in his hands. Above the head of the figure, but on the periphery of the coin is the legend in Tamil-Brahmi characters reading Kolli purai.

Shortly after this discovery a variant of the same coin was again reported. All the features in this coin are exactly the same like the previous one except for the legend which reads Kolirumpurai i.e. lord of the Kolli hills. On the basis of palaeography, this variety is ascribed to a later date than the Kolli pururai issues. But Krishnamurthy who first reported the coins prefer an earlier date (2nd-1st cent. BC) (Nagasamy 1996:9-10). Another type of coin with head of the king at the centre and the legend reading Makkodai above the head.
The name is identified with the Chera king Kottambalattu tunjiya makkotai mentioned in Purananuru (Purananuru 49), the chief of Tondi and the head of his subordinate Pittan (Purananuru 172). Incidentally, two of the Pugalur inscriptions make mention the name Pittan allies Pittantai whose daughter gifted beds for the Jain monks. Whether the Pittan mentioned in the record is same as the Pittan of Purananuru verse is not exactly established. It is probable that this chief would have maintained close relationship with the Cheras.

Another silver coin reported by Krishnamurthy has the legend Kuttuvan kotai identified with the Chera king Kotai referred to in Purananuru (Purananuru 54; Akananuru 346). Though the name of the king is not found mentioned in the verses, but the end note mentions that this poem was sung in praise of Kuttuvan kotai. Mahadevan hesitantly identified this king with the king Kadumiputa Chera of Edakkal inscription (Mahadevan 2003:118).

Among the various types of coins that are available in Tamil Nadu, the fantasy towards the Roman coins is unbound. The fact that south India more particularly Kongu region of Tamil Nadu was the epic centre for the occurrence of Roman coins and it is well established through numerous hoards discovered from time to time. Obviously these coins reached Tamil Nadu through the maritime trade when it enjoyed the maximum attention of the western world. The archaeological as well as the literary records present a fair picture about the nature of this trade.

The maximum number of hoards so far reported comes from the Kongu region including Karur. If we consider Karur region as a separate unit, it account for the large number of findings (Nagasamy 1996 16-18; Mahadevan 2003:118).

The above mentioned data are highly tentative since hundreds of Roman coins are being collected by many individuals from Amaravathi river bed. But in contrast to this, the archaeological excavations at Karur yielded any only one a highly corroded silver Roman coin found in the upper level (Shanmugam 2003:95-95; Nagasamy 1996 21-22). Apart from this, there is yet another category in the form of non-Roman coins originated from Greece, Mediterranean region and Persian Gulf. A substantial amount of these coins were recovered at Karur, dating from 3rd cent. BC-1st cent. BC. These coins were issued from places like Thrace (north east of Greece), Mesopotamia (Selucid), Crete (south of Greece), Thessaly and Phoenicia (Mediterranean region).
The last group of artifacts namely the inscribed seals and rings are known not only for its aesthetic value but also for their historical value (Fig. 6.30). The inscribed names generally refer to individuals or merchants who probably held high rank in the society. A unique silver seal retrieved from this place had several symbols resembling the Iron Age graffiti marks thereby indicating a continuity of the tradition. Even though all these findings acclaim importance, the absence of such materials in well defined stratigraphic levels, remain as a major hurdle for the archaeologists in accepting its authenticity. However, the recent excavations at Pattanam in Kerala yielded several Chera copper coins in stratified levels.

Thus, the occurrence of large number of Chera coins at Karur and its total absence in other places restricted us in drawing a comprehensive distributional pattern. However, the mapping of Punch-Marked coins and Roman coins in the study area provided a pattern in its distribution. Nearly 95% of the hoards were reported on the ancient trade routes and the remaining 5% were reported close to the resource bases where the active commercial interaction took place.

Antiquities

The antiquities are quite varied and fairly representative of almost all conceivable materials of the day. Both the habitation cuttings and the Iron Age monuments yielded antiquities of equal interest. The antiquities from the Iron Age graves were comparatively richer in certain respects as they were placed as offerings, whereas the objects recovered from the habitation were mostly of discarded material. The three excavations undertaken in this valley at Karur, Nedungur and Porunthal are invariably habitation-cum-burial sites. Among the three, Karur report is yet to be published and the Nedungur excavation report is limited in nature. Among the antiquities, Karur antiquities are rich but the material is not available for the study (Fig. 6.31-33). In case of Porunthal, all the antiquities are available for investigations which are discussed in the previous chapter. The objects made of iron, quartz, carnelian, agate, steatite, terracotta, glass, paste, ivory, garnet and shell were collected at the site. The first five objects were unearthed in large numbers in graves whereas the remaining objects were reported in habitation cuttings. The objects like iron, terracotta, quartz, glass and paste were collected both from habitation and burial. Among the objects, beads were collected in large numbers. If one takes the number of
objects into account, steatite, glass, paste, quartz and carnelian are found in order of preference. Gold pieces are found in limited number. The objects that were recovered both from habitation and graves had different social and economic values. Therefore, a brief account on the availability of various objects is made here to show the nature of the material documented in this valley (Fig 4.40; 4.71-73).

**Beads**

Gem stones industry of the Kongu region (Chera country) played a crucial role in the trade contact with the Mediterranean. Beads of agate, carnelian, garnet, quartz, steatite and glass were collected from Porunthal Iron Age graves. Such beads were reported at Kodumanal and Thandikudi. The Sangam literature Padriruppattu (67:1: 74:5) referred to the site Kodumanal as Kodumanar, famous for gems. The beryl, sapphire and quartz were found in the mines in and around Kangayam, Padiyur, Sivanmalai and Arasampalayam respectively (Fig. 6.34-35). Even today, the artisans could produce excellent quality of the beads by using simple instruments (Fig 6.36). The usage of simple instruments and the long survival of this tradition recall the technology adopted in ancient days. The inheritance of this technology is reflected even in the literature. The passages like ‘sparkling (milira) gems (mani) appearing on the ground due to the thrust of toe of running deer’ (Purananuru 202 :1-8); ‘the cattle keepers (kovalar) collecting sparkling precious stones (katir mani) while going for cattle grazing in pastoral (mullai) region’ (Patiirrupattu 21: 20-23); ‘collecting gems while tilling the land’ (Patiirrupattu 58: 12-19); gem-borer (tirumani kuyinar) (Maduraikanchi: 511); ‘the whetstone / lap stone maker (cirukarotan) mixed with wax (payin) and stone’ (kal probably of corundum) (Akananuru 359: 9-10) speak on the existence of this well established industry. The gem stone trader (maniya vannakkan) is referred to in the Arachchalur Tamil-Brahmi inscription (Mahadevan 1968: 57-73). The occurrence of majority of Roman coin hoards in the gem stone industry area of Chera country, Pliny’s expression and Tiberius anguish over the huge amount of Roman wealth pouring into the foreign land are the fine reflection of the existence on the dynamic gem trade under the Cheras (Rajan et.al 2001:6-7). Thus, the gem stone industry of the study area played a dominant role in trade activities.

Carnelian beads both plain and etched variety are found large in numbers. Their colour ranges from pale flesh to deepest blood red. The one which had deep,
clear, evenly colored and free from veins, cracks and flaws is considered as the best. The etched variety of carnelian is found in three types, which involves very complicated procedure. The major shapes found at Porunthal are standard circular, bi-cone, truncated barrel, cylindrical, disc beads of different shapes. The etched beads exhibit designs like circles, bands, dots and zigzag lines arranged in spiral circle (Fig 6. 37-42). The carnelian beads, one of the striking features of the Iron Age burials of South India, found in almost all the burials were either plain or etched or both. Some of the sites which yielded the beads are Nattukkalpalayam (Walhouse 1875:31), Porkalam (Thapar 1952:14), Paravai (Rea 1888:66), Vadagarai (Rao 1972:86), Tiruppur (Ayyar 1940:522), Nandanmedu (Rao 1972:89), Sanur (Banerjee and Soundarananan 1959:36), Brahmagiri (Wheeler 1930:173), Vellalur (Beck 1930:173), Kilmondombadi (Foote 1916:61-62), Coorg (Walhouse 1875:126), Sirumugal (Longhurst 1913-14:44), Sangapadai (Raman 1956-57:32), Karadiyur (Foote 1916:63), Kelamangalam and Gujjurahalli (Rea 1909-10:22-23) and Mooryabetta (Cole 1868:202). This implies the wide-spread occurrence of beads of various materials, size and shape, in megalithic burials of South India and hence Porunthal was not isolated from other regions in cultural aspects.

Agate is a variety of chalcedony, whose variegated colour is distributed in regular bands or zones or in clouds or in dendritic forms. The bonding is often very delicate with parallel lines of different colours, sometimes straight, sometime undulating or concentric. The parallel bands represent the edge of successive layers of deposition from solutions in cavities in rocks, which generally confirm to store shape of the enclosing cavity. In India, it is found from amygdaloidal flows of the Deccan and Rajmahal traps. The chief sources of supply are the rivers that drain the areas covered by these rocks. Few beads, mostly of elliptical in shape were found at Porunthal (Fig. 6.43).

Steatite is an important and popular material for beads. It is found all over India, but rare in Tamil Nadu where a few sites have yielded steatite beads till date. Steatite beads are made by two methods: (i) flaking the natural stone and (ii) by moulding steatite powder into a bead. In this technique, first the powder is made into a paste on a thread and then baked. In this process, the thread gets burnt in the fire and a hole is produced, then it is cut into the desired size by a saw and after being heated on a very high temperature as 1200°C. The excavation at Porunthal has
revealed more than 10,000 steatite micro beads for the first time in Tamil Nadu that too from a burial (Fig. 4.74). More than 800 such beads were reported at Thandikudi (Rajan 2004:146-148, Rajan 2007:143-150) (Map 26).

Quartz is the commonest mineral oxide of silica and appears in a great number of forms, than any other. It commonly occurs in prismatic hexagonal crystal terminated by pyramid. Cleavage is not observed, fracture is typical concoidal and lustrous, vitreous to greasy in dull, colourless to nearly black, transparent to opaque. At Porunthal, nearly 300 quartz beads and pendants were collected (Fig. 4.73). The shapes and sizes were first time encountered in an Iron Age burial in Tamil Nadu. The typology of the beads are mostly long truncated barrel, circular, short truncated bi-cone, standard ellipsoid circular, truncated bi-conical tablet, whereas the typology of pendants are inverted axe, thin flat drop, inverted drop and ball shape (fig. 6.44).

Glass

The term “glass” includes a wide range of products that are characterized chiefly by their desired rate of cooling from a state of fusion to a solid state. Generally, glass is produced by melting a mixture of silica (sand: about 75%), soda (about 15%) and calcium compound (lime: about 10%) with the desired metallic oxides that serve as colouring agents. S.R.Lele (1967), M.G. Dikshit (1969), S.N.Sen and Mamata Chaudhury (1985) and Subbarayappa (1991; 1999) made limited study on glass technology. Recently, Gratuz has made some scientific study on the glass material collected from early historic sites of Poompuhar, Kodumanal and Alagankulam which provided a good picture on the nature of glass technology in Tamil Nadu (Gratuze 467-493). Besides the recent discovery of a glass making furnace at Porunthal near Palani, Ariyur near Chingleput and Manikollai near Cuddalore provided fresh evidence on this subject. The excavation in a bead mound (paci > bead; medu > mound) at Porunthal met with more than 2000 glass beads from a 50 sq.m area. The site Manikollai (mani means bead; kollai means field) yielded thousand of glass beads on the surface spread out in an area of more than 25 acres of land. Literally it is a bead mound. The findings of the above scholars who examined the glass objects in Indian context has come out with a summary of glass technology in ancient India and it is being summarised here to understand the technology in
broader perspective and the findings of Tamil Nadu sites have been discussed elaborately.

It seems that the Indus Valley Civilization or Harappan settlements did not have glass, although Harappans had contacts with the Mesopotamian region. Perhaps the Harappans preferred faience, which was a type of proto-glass. The Painted Grey Ware (PGW) Culture of the Ganga valley (c.1000 BC) did have elegant glass beads. There is some archaeological evidence in the form of glass beads found at Maski, a Chalcolithic site in the southern Deccan; it is older than the beginning of the first millennium BC. Indian glass industry began to gain momentum three or four centuries before and after the Christian era, although its knowledge was limited to beads, bangles and various types of similar minor objects. About 30 excavated sites in different regions of India have produced several glass objects in different colours such as green, blue, red, white, orange and some other shades. In Tamil Nadu, several archaeological sites yielded glass beads. However, the sites of Arikamedu (Casal 1956), Manikollai, Thiruchanur, Ariyur and Porunthal are unique as these sites yielded several thousands of beads. The uniqueness of glass beads of Porunthal is discussed in previous chapter (Fig 4.14, 23, 4). Porunthal site is met with a glass furnace thereby suggesting its involvement in production of large number of beads. The data available about the technique of glass production in India is deficient in quantity. Kopia, situated on the bank of the river Anoma in the Basti district of Uttar Pradesh, had perhaps a glass factory as a large number of glass objects were found there (3 cent. BC to 3 cent. AD). Blocks of glass, weighing more than 50 kg and measuring 45 cm x 30 cm x 23 cm were found at Kopia. These probably give an indication about the massive scale of operations in vogue at that time. A circular oven of about 75 cm in diameter and 37 cm in depth, found at Nevasa was made of burnt clay and it is an open-fired type of furnace.

Indian glass-makers had well-developed technological skills in the manufacture of beads, bangles and a few other articles. After observing the various objects excavated at different sites, it may be inferred that glass-makers employed methods such as moulding, folding, twisting and double-stripping. Perhaps, a method known as wire-winding method was also adopted for preparing beads of various types. On the basis of various beads found at Brahmapuri, it is indicated that the beads were probably made by this method by coiling the fused glass rod around a wire or
spoke, and twirling it to obtain the desired shapes. The technique of preparing the 'multiple-wound beads' of opaque glass of different colours was also known. The archaeological excavations in Brahmapuri and Kolhapur in Maharashtra State (2 cent. BC- 2 cent. AD) reveal that there was also a glass industry in that area, especially for the production of lenticular beads. Some cylindrical beads were also noted in the Kolhapur area. Some Satavahana sites have produced folded beads, twisted beads as well as cane-glass beads from Nevasa, Ter, Prakash etc. in the Deccan region. It is in Kopia that remains of furnaces and crucibles were found along with a big piece of crude glass (its weight was about 50 pounds) (Singh, 1989; Roy et. al., 1953).

The chemical analysis carried out on glass beads of different sites suggests that the Indian glass beads are basically soda-lime and soda-alumina based beads. Different methods are adopted to identify the chemical composition of the beads. Gratuz used LA-ICP-MS (laser ablation-inductively coupled plasma-mass spectrometer) method for Alagankulam material and FNAA (fast neutron activation analysis) method for Kodumanal beads. K.Rajan used XRF (X-ray Fluorescence Spectrometer) method for Porunthal and Thiruchapuram glass beads. All the three methods yielded common result.
Twenty samples were studied at Alagankulam. There are monochrome beads. Their colours are: opaque green (4 specimens), opaque red (8), opaque black (2), transparent turquoise blue (3), transparent dark blue (2) and transparent bluish (1). They are of different sizes and their shapes are simple: globular, annular, barrel or disc-shaped. As far as the glass material is concerned, the analytical results show it is a heterogeneous group using different sands and fluxing agents. Alagankulam glass material is soda-lime based. Besides these common beads, it also yielded potash based glass beads. Four potash rich glass beads were recovered at Alagankulam thereby suggesting its outside contact. The contemporaneous beads found in China (250 BC.-250 AD.) have a similar composition (Shi Meiguang et al., 1987) which makes credible hypothesis of a Chinese production of the potash glass beads. Such potash glass beads were noticed at Ridiyagama and Kelaniya in Sri Lanka. These findings
suggest that these beads from China would have reached Alagankulam through Southeast Asia and Sri Lanka. These findings also suggest their trade contact with Southeast Asia.

<table>
<thead>
<tr>
<th>Oxide</th>
<th>Average rate</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Na₂O</td>
<td>15%</td>
<td>2%</td>
</tr>
<tr>
<td>MgO</td>
<td>0.4%</td>
<td>0.2%</td>
</tr>
<tr>
<td>A1₂O₃</td>
<td>9%</td>
<td>2%</td>
</tr>
<tr>
<td>SiO₂</td>
<td>67%</td>
<td>3%</td>
</tr>
<tr>
<td>K₂O</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>CaO</td>
<td>2.2%</td>
<td>0.2%</td>
</tr>
</tbody>
</table>

Unlike Alagankulam, the Kodumanal beads are mainly of soda-alumina based beads. Eleven glass beads collected from Kodumanal were analysed and found that those were of soda-lime based beads (soda >15.3% and alumina >7%). As the Kodumanal is an inland trade centre, it did not have the direct contact with Southeast Asia like Alagankulam which is a port on the east coast.

The chemical analyses of glass objects from over 15 sites of different parts of India clearly indicate that Indian glass-makers knew the significance of metallic oxides and other chemical compounds in imparting the desired colours to the glass objects. They also used minerals containing iron like haematite, copper, cobalt, manganese, aluminium, and lead along with silicates in a calculated manner and in appropriate quantity for the production of various types of glass beads, bangles, tiles and bottles.

Glass is considered as one of the export items during the early historic period. The compositions of some glass beads show similarities with that of the Roman glass while others seem to be typical of the Indian world. If Roman glass is well-known, very few studies about Indian glass were made. The chemical and spectrographic analyses show that glass objects were made of three basic compositions namely potassium-silica, lead-barium and soda-lime and are respectively made in China, in the West and in Tamil Nadu. The scientific analysis made on the beads of Alagankulam, Kodumanal, Thiruchanur and Porunthal clearly points to the cultural and trade contacts that existed between them.
Copper

Compared to iron, copper was reported with limited quantity. Majority of the objects were confined to coins, seals and rings. The remaining objects were confined to small objects like spindle, needle, hook, ring and ornamental pieces (Fig 6.45). When compared with semi precious stones, these were found in limited quantity, probably due to non-availability of copper ore in Tamil Nadu.

Gold and Silver

Gold and silver are very rare and silver ones are proportionately more in quantity. A small gold pendent was reported from Porunthal. Silver Punch-Marked coins, Roman coins and Chera coins were collected in large numbers in this valley. All of them were imported as finished products except the local issues. The occurrence of Chera coins with Tamil-Brahmi scripts suggests that these were minted locally after obtaining silver from elsewhere or re-used the Punch-Marked coins. The metallurgical study still wants to understand this process (Fig 6.12, 13, 25, 32).

Shell objects

Shell (chank) was a popular material for making bangles, and to some extent beads. The bangle pieces (all of them fragment) are rectangular in section. On many pieces one or two grooves are found on the outer face. Some are plain without decoration. The fact that some partially cut shells are available alongside the bangle pieces, as one observed at Karur and Kundadam, may suggest that some shell workers were residing in the village itself. The shells must have been brought from the seashore, either from the Kerala coast or from the east coast (Fig. 3.177).

Terracotta

Gamesmen, ear lobes, ear rings, human and animal figurines are some of the terracotta objects reported from this valley. A few small balls with holes at the centre may be considered as ornamental beads. The other beads are mostly pear or arecanut-shaped. The broader side of those beads, i.e., the bottom side, is flat. This shape is a bit strange for beads. Moreover two of them had an iron needle cemented in the perforation. Iron needle suggests that these so-called beads were spindle whorls only (Wheeler, 1945:96).
Thus, the above antiquities collected from this valley representing different segments of the society reveal various cultural, religious, commercial, social, political and economic aspects of the society. For instance, the iron horse stirrup represents the status of the individual in a society. Occurrence of large number of carnelian beads represents more of the economic status. The gamesmen and dice represent their leisure games. The coins, carnelian, steatite, agate and some unique objects like terracotta figurine particularly the one collected from Porunthal represent the external trade contact. The quartz, glass and paste objects represent the internal exchange system. The implements like sickle, knives and hoe represent their agricultural production. The sword, lancer, spear, dagger and arrowhead placed as offerings in the graves reflect the ritual practices. Thus, the antiquities collected from different cultural context provide a clue to understand the religious, social, economic, political activities of the society (Fig. 4. 25-28).

Trade

The formation of port towns, trade centres and trade routes and their long survival depended upon the sustained supply of economically marketable resources like iron ores, gems, pearl fishery and forest products. The optimum utilization of these materials and subsequent exchanges within and outside the region during Early Historic period is seen in the light of fresh findings that were exposed in the form of epigraphical, numismatic and archaeological evidences. The recent excavations conducted in resource based production centres provided a clue to the emergence and expansion of trade. The discoveries of glass bead making furnace at Porunthal could be cited as one of the finest examples of recent excavations. The whole ambit of trade is seen as a single component due to limited nature of evidence. However, an attempt is made to provide a platform to understand trade and other cultural linkages that existed in Amaravathi river valley. The 154 habitation mounds identified out of 248 archaeological sites suggest that human occupation is widespread in this valley transcending different ecological zones. The continuous human occupation led to resource mobilization and that led to resource transaction through trade. The archaeological and epigraphical findings of the region under discussion point to a vibrant trade over extensive and reliable trade networks. The long survival of trade centres in economically viable resource zones are the fine indicators of its natural growth and expansion. The state protection and the formation of trade guilds had an
indirect impact on the development of trade. These multiple factors played a crucial role in maintaining these commercial activities over a period of time. These dynamic trading activities have been discussed in the backdrop of recent archaeological evidences that surfaced in the study area.

The survival of Iron Age monuments over thousand years and its transformation into Early Historic without any cultural break show continuous occupation. The occurrence of Tamil-Brahmi inscribed potsherds from a grave at Kodumanal, Porunthal (Rajan 1996: 72-85; Rajan 2009) and Marungur (The Hindu March 5, 2010) a Punch-Marked coin from a grave at Sulur (Beck 1930:166-182) and a bronze seal with two line script from a burial at Anaikottai in Jaffna Peninsula (Raghupathy 1987:200-202) suggest their transformation. These all denote the continuity of custom of erecting Iron Age monuments in Early Historic period. This cultural transformation is reflected in their records, say, archaeological, epigraphical, numismatics and literature. Hence, the emerging trade activities are seen keeping these factors in mind.

Trade played an important role in the formation of inter-regional network and also for territorial expansion during the Early Historic period. For instance, Cheras made a territorial advance into the Kongu country (Coimbatore region of Tamil Nadu) to keep high valued economic products like gem stones, iron ore and forest products under their control (Rajan 1991:111-112). The concentration of human settlements witnessed habitation mounds found in iron ore area, gem stone yielding zones, pearl fishery, cotton manufacture centres and spice yielding areas are of a proof that there were well established trade networks. The merchants specialising in salt, sugar, ploughshare, cloth (Fig. 6.46), gold (Pugalur), oil (Pugalur) and gem (Arachchalur) (Fig. 6.5) found mentioned in Tamil-Brahmi inscriptions as donors suggest the organized trade (Mahadevan 2003:141-142)

The availability of oil merchant at Pugalur is very interesting. This region is known for oil production even today. The occurrence of quite a number of medieval inscribed stone oil-press-mills donated by trade guilds like ainurruvar found at Velliyanai, Punuttu, Gudalur and Vadaseri suggests the continuity of this trade. There are several medieval trade guild inscriptions located on the trade routes at Thamaraikulam (Fig.4.06), Rajapuram, Kodaimangalam (Fig. 3.13), Dharapuram,
Nangavaram, Monjanur and Karaiyur (Fig. 3.104) in Amaravathi valley further strengthen our hypothesis. Besides, the terms like nikama and cattu denoting a trade guild points to the existence of different merchant guilds that existed during Early Historic times. The occurrence of Punch-Marked coins, the Prakrit terms, products of other regions like carnelian, lapis lazuli, agate, copper, lead, silver, etc., are suggestive of intra-regional trade interactions.

The collection of numerous luxurious objects particularly beads, in some occasions more than eighteen thousand beads from four excavated graves at Porunthal is suggestive of accumulation of wealth. The host of coin hoards, particularly the Roman coins and Punch-Marked coins, unearthed on trade routes are another pointer of the external trade network. Interestingly most of the Roman coins are found in association with Punch-Marked coins. Besides, several local issues were also recovered. In the present context, it is very difficult to assign the authority of minting these coins either to the king or trader/trade guild. The Punch-Marked coin did not carry any legend. However, the coins issued in the name of Chera kings like Kolliporai, Makkotai and Kuttivan Kotai are in contrast to contemporary Punch-Marked coins. The concentration of Punch-Marked coins, Roman coins and other local issues in trade centres and on trade routes is a indicate of the existence of both inland and external trade networks. These trade networks exclusively depend on supply and demand system on one hand and conducive business atmosphere on another hand. The production, procurement and transportation of trade goods through well-established trade routes to a potential consumption area are a prerequisite for flourishing trade.

Another industry that could fetch greater amount of external wealth to Tamil region is the gemstone industry. Two intaglios (a garnet and a carnelian) representing a grazing horse from Vellalur and a woman and the finding of a cameo representing fish on carnelian from Karur are fine examples (Fig. 6.47-48). The recent study carried out on traditional bead making industry at Kangayam by K. Rajan in the backdrop of Kodumanal excavation proved the continuity of this industry (Rajan 2004:385-414). Gem stone industry of the Kongu region (Chera country) played a crucial role in the trade contact with the Mediterranean. Beads of sapphire, beryl, agate, carnelian, amethyst, lapis lazuli, jasper, garnet, soap stone, quartz, onyx, cat eye, etc., collected in different manufacturing stages like finished, semi-finished,
polished, unpolished, drilled and undrilled in the excavation at Kodumanal stand as a testimony to their production (Rajan 1991:111-112). These finished beads were sent to Musiri through Palaghat gap on the Kerala coast for final shipment to Roman world. Such beads also made a way to South East Asia.

The beryl and sapphire were being collected until recently in the mines near Padiyur and Sivanmalai respectively. The quartz mines noticed closed to Iron Age and Early Historic habitation-cum-burial mounds in the study area at Kotthanur, Mulaiyampundi, Kottampilayam, Senthalaiyampalayam and Punjaithalaiyur suggest their exploitation of these mineral resources. The quartz blocks of inferior quality were used for making cairn circles in these sites. Even today, by using simple instruments, the artisan of this region could produce excellent quality beads. The gems are bored by using instruments like steel needle fixed with corundum (kurundam in Tamil) tip and bow drill. The inheritance of this technology is reflected in the literature.

Another important industry that fetched good amount of wealth is of iron and steel industry. The traditional crucible steel was produced out of high carbon alloys in India before 4-3rd cent. BC. This is well reflected in the Classical Mediterranean accounts (Bronson 1986:13-51). Pliny's Natural History identifies the Chera country as the source of iron to Roman world (Bronson 1986:18). This traditional method was in vogue till the 17th century in Tamil Nadu (Buchanan 1807). The recent chemical analysis and metallurgical studies carried out on iron objects collected from iron producing sites at Guttur, Mallapadi and Kodumanal by Raghunatha Rao and Sasikaran (1997:347-359) demonstrated the evidence of cast iron which attained through the maintenance of high temperature around 1300º over a long period. The study, further, reveals that they not only smelted wrought iron and carburised them to steel but also fabricated iron bar by forge welding low carbon steel strip with wrought iron strips to give strength to the artefact (Sasisekaran 2004:61). The study of steel-producing site at Mel-Siruvalur in Tiruvannamalai district (Srinivasan 1994:44-59) clearly proves that high quality iron and steel were produced in Tamil Nadu. While other parts of India followed the technique of carburisation, the smelters of Tamil Nadu followed the technique of decarburisation as the carbon content in the iron ores is relatively high here. The discovery of separate furnaces like conical furnace for iron and crucible furnace for steel at Kodumanal goes well with this process (Rajan
The identification of iron furnace along with iron ore, slag and iron objects in different stages of manufacture at Puliyumattam (Fig. 3.33), Rangavasu (Fig. 3.42), Kottanur and Puliyamarattukottai (Fig. 3.31) are suggestive of their iron production. The last mentioned site yielded a crucible. It is quite clear that a new technique is conceived and developed here to accommodate the locally available high carbon content iron ore. This high quality steel was at a greater demand in the West for a longer period. Besides, mineral based industrial activities, forest products like spices, cardamom, sandal wood, ivory, medicinal plants, etc., played a crucial role both in the internal and external trade.

The high valued objects of export recovered from archaeological sites located in different ecological zones demonstrate the existence of well-established trade network with inland towns, capital cities, trade centres and port towns. The movements of export items between different trade centres by the nigammattor or cattu (trade guild) or vanikan (trader) is well attested in archaeological, epigraphical and numismatic records. These trade centres played a vital role in accelerating inter and intra regional trade contacts. The exchange of goods through sustained trade contacts with mutual benefits between two cultural groups is seen as a dynamic process. The sustained trade contact over a longer period of time goes with well-established trade networks and production centres. Thus, a close view of the archaeological evidences encountered in the study area helped to understand the existence of such network.