

Funerary goods in the Iron Age/Megalithic Burials of Pamba River Basin, South Kerala – A Discussion *

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Abstract

Funerary goods were deposited with the dead in many periods of the human past, from the late Palaeolithic to the Middle Ages and the more recent past (Harke, H 2014). It contains information about the economic fluctuations and social changes experienced by the past societies responsible for their deposition (Izquierdo-Egea, P 2013). The practice of placing various objects of day to day use with the dead supports the firm belief in the continuance of life or a virtual breakdown of unhealthy saturnine attachment among survivors. The grave is also considered as the residence of the departed. The present paper is a discussion of various aspects of funerary goods such as typology of pottery, beads and other objects, chemical analysis of iron implements, SEM study of stone beads and carbon dating of charcoal samples unearthed from the burials of Pamba River Basin. A comparative discussion of funerary goods of the Pamba River Basin with the other parts of the state is also included in the paper.

Keywords: Pamba River Basin, Iron Age/Megalithic Burials, Funerary goods, Comparative study, Chronology.

Introduction

Iron Age burials also known as megalithic monuments are widely found in all over the world especially in Kerala. They are quite well preserved, most visible and common archaeological remnants from the bygone eons of Kerala. Large number of megalithic burials varying in its architectural features, raw materials and funerary goods are found in every district. Megalithism is explained as an aspect of religious practice of the ancient man pertaining to death and in his belief in the

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'life after death'. The practice of placing various objects of day to day use with the dead supports the firm belief in the continuance of life, or a virtual breakdown of unhealthy saturnine attachment among survivors (Ambily, 2021). The practice was clear from the references in Sangam literature (John, 1973:134). The Sangam literature comprising the Ettuttokai and Pattuppattu mentioned the political, social and economic condition and existence of both burial and cremations prevailed in Kerala (Manickavasagom Pillai, 1973:109). As said earlier Iron Age burials are also known as the Megalithic Period in India in general and Kerala in particular. But all the burials of this period are not megaliths. Many of them have no lithic association like urn burials, barrows, pit burials etc. These are not large enough to be called mega or huge, nor have any lithic association. So the term megalith is not appropriate to refer to all burials and monuments of the Iron Age. But among the various kinds of mortuary practices prevailed in that time, erecting huge stones or megalithic monuments is comparatively high (Gurukkal and Varier, 1999). For this reason and the term megalithic have been widely accepted in almost all parts of the world, here also this term denotes all types of burials and monuments of this period that have sepulchral association, irrespective of their dimension and structural features.

The Pamba River lies between 9°29'59.99" North and 76° 24' 59.99" East (Figure 1). It is 176 km in length and originates at Pualachimalai hill in the Peermade plateau in Idukki District. Pamba River drains through Idukki, Pathanamthitta and Alappuzha districts and finally empties into the Vembanad Lake. It is bounded by Mallappally taluk of Pathanamthitta district, Cherthala and Kuttanadu taluks of Alappuzha district in the north, Kozhanchery and Adoor taluks of Pathanamthitta, Karthikappally and Mavelikkara taluks of Alappuzha district in south, Tamil Nadu in the east and Arabian Sea in the west. Sixty five megalithic sites are found in Pamba basin so far. The reported sites in Pamba basin can be divided into 1) Cist Burial, 2) Dolmenoid Cist, 3) Urn Burial, 4) Menhir, 5) Cairn circle, 6) Laterite chamber, 7) Dolmen and 8) Sarcophagus.

Among the sixty five sites only eighteen sites are having material remains reported from various excavation, exploration and chance findings. Vandiperiyar, Kadukuthy, Chenkalthadam, Mudimala, Njallikkandam, Thottabhagam, Kavumgumprayar, Niramakulam, Puliyyur and Phoothankara/Enadimangalam are the excavated sites in Pamba basin. Exploration/chance-finds are from Kavumbhagam, Valanjavattom, Pandanadu, Eraviperoor, Illimala Bridge, Kodakulanji, Thiruvalla

Funerary goods in the Iron Age

locality 1, and Vandiperiyar locality-1 (Table 1). Among these, a few sites were salvaged by some of the colleges in the nearby areas of the sites. According to the available evidence, pottery, iron objects, bone pieces, beads, copper objects, one stone axe, charcoal and gold ornaments were the material remains reported from the Pamba basin so far (Ambily, 2021). A brief idea of funerary goods reported from the Iron Age burials of Kerala with Pamba basin is discussed in this paper.

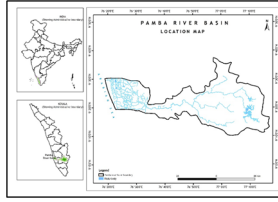


Figure 1. Location Map of Pamba River Basin

Table 1: List of Material remains reported from the Megalithic sites in Pamba basin

Sl.No	Name of the site	Megalithic Type	Material remains
1	Vandiperiyar	Cist, Dolmenoid cist and Cairn circle	2 bigger jars with decoration and small pots
2	Kadukuthy	Dolmen	No material remains
3	Mudimala	Laterite chamber	Iron implements
4	Chenkalthadam	Urn Burial	9 pots, 2 small black and red ware, encrusted iron sickle and pieces of infant baby bones
5	Kavumgumprayar	Not mentioned	Iron implements and stone axe
6	Valanjavattom	Not mentioned	Six urn burials and Bayonet like iron weapon
7	Kavumbhagam	Not mentioned	Burial jars and iron lamps or swords
8	Njalikkandam	Urn burial	Iron pieces and bone fragments
9	Thottabhagam	Urn burial	Bone pieces
10	Pandanadu	Urn Burial	Bone pieces
11	Eraviperoor	Urn burial	No material remains
12	Kodakulanji	Urn burial	Black and red ware potsherd and old jars
13	Thiruvalla locality -I	Not mentioned	Rusty remains of iron implements
14	Vandiperiyar locality-I	Not mentioned	Red bowl
15	Illimala Bridge	Not mentioned	Iron sword
16	Puliyur	Cist burial	Six pieces of gold ornaments, iron blades and piece of shaped copper
17	Niramakulam	Cist Burial	Pots, bowls, lids, ring stands, beads, charcoal and iron implements
18	Phoothankara/Enadimangalam	Cist burials	Iron implements and black and red ware in 1938 and Pots, bowls, ring stands, lids, fragments of iron tools and charcoal in 2018.

Funerary Goods

Megalithic monuments in India generally have one or more complete skeletons or a few bone fragments, and associated grave goods comprising different varieties of pottery, iron implements, beads, stone tools, gold ornaments, charcoal, ash, grains etc. But in the case of Kerala most of the burials are fractional or secondary in nature. Not a single complete skeleton has been reported from any of the sites hitherto. Only charred, uncharred or decaying bone fragments are found so far. Some of the burials do not have any kind of bone remains too. Thus, the burial practice of Kerala may be post excarnated or cremated. It is also difficult to infer whether the burials were meant for individuals or more than one due to this practice except in the case of multiple burials (Gurukkal and Varier, 1999).

The sites having evidences of bones reported in Kerala are Varkkala (skeletal remains) and Sreekaryam (bone like material) in Thiruvananthapuram district, Thenmala-Kulathupuzha area (human bones), Mangadu (charred bones), Poredam (child fossil) and Arippa (child cranium with fragmented skeleton remains of an adult and animal bone) in Kollam district, Anjunadu valley (human remains and ashes), Nedumkandam/Chempakappara (bone remains) and Chel-larkovil (Humerus bone?) in Idukki district (Figure.2), Thonadannur (bone pieces), Mekkalady and veliathunadu (bone remains), Machad and Pazhayannur (charred bone pieces including skull, radius and ulna), Cheramangadu and Punkunnam (bone pieces) in Thrissur district, Anakkara and Chingachira (skeletal remains) in Palakkad district, Chelavoor and Thondanur (bone pieces) in Kozhikode district, Kallarakkunnu (bone pieces) in Malappuram district, Cheruparamba (uncharred human bones), Kotturvayal (human bones include fragment of skull, few teeth and limbs of a child), Citrari and Perungulam (bone pieces) in Kannur district etc (Ambily, 2021). Different parts of bones, age and sex group of buried persons can be identified from these evidences. Not much scientific studies on bones have been carried out in Kerala. Only one example of human skeletal remains from Anakkara burial excavations has been studied and as result some osteo-phytic growth on vertebral body portion and possible case of maxillary sinusitis were observed (Abhayan,2018:174) interestingly, an animal bone also reported from Arippa in Kollam district. Animal ashes were reported from Chenaparambu in Kozhikode also (Chedambath,1997: 283). It might be a clue of the domestication of animals during the Iron Age/Megalithic Period.



Figure 2. Humorous bone, Chellarkovil, Idukki (Courtesy: Krishnaraj.K)

Compared to other sites in Kerala Pamba basin is not an exception to this. Bone remains from Thottabhagum, Njalikkandam and Pandanad and infant baby bones from Chenkalthadam in Pathanamthitta district are the sites having bone remains reported in Pamba basin so far. The evidence shows that megalithic people of Kerala and Pamba basin followed a fractional or secondary burial practice. Infant baby bones with iron axe and other materials from Chenkalthadam is a clue that some megalithic people keep fresh material objects in burials, which is for using it in the life after death, instead of materials already used by the buried person in his/her daily life. Similar examples have been noticed from sites like Arippa, Poredam and Kotturvayal. In Arippa adults, child and animal bones were found placed in the same burial, indicating the fact that they might have died together at a time or had some other ritual connections (Ambily, 2021). In Tamil Nadu, Karnataka and other states have complete skeleton remains in megalithic burials even Gulbarga region in Karnataka has sixteen people in one grave is reported by Meadows Taylor (Ramanna, 1983:5).

Various types and shapes/forms of pottery have been noticed from the megaliths of Kerala. Black and red ware, russet coated painted ware, mere red wares, red-slipped wares, polished red-ware, black and black polished ware are the major types reported hitherto. Handmade (Figure 6), wheel made and both hand and wheel made potteries have been noticed. Pinkish, grey and chocolate coloured, micaceous grey, painted and decorated pottery also have been reported from some sites. Graffiti on potsherds also have been noticed from burials. Urns, bowls, dishes, vases, jars, lids, pots, ring stands and globular pots are the major shapes. Urns are of different shapes and features as exemplified by the legged ones (Figure 10), pyriform-types, pointed ones and those with variously fashioned rims, shoulders, sides and bases. Shreds of pinkish channel spouted from Chitrari rock cut caves in Kannur, Channel spouted vessels from Ummichipoyil in Kasargod are resembling the Neolithic type of vessels. (Jayashree, 2007:18-35). Black and red

ware, red ware, red polished ware, black and black polished wares are reported from most of the megalithic sites. But chocolate coloured pottery was reported from Niramakulam only. Grey ware reported from Arippa in Kollam, Malambuzha in Palakkad, Cheruparamba, Keralthervu and Citrari in Kannur. Micaceous grey ware was reported from Poredam in Kollam (Ambily, 2021).



Figure 3. Painted pots from Poduvacherry, Kannur (Courtesy:Krishnaraj.K)

White dotted painted shreds reported from Oliyani in Kottayam (Figure 5). Painting on the bottom of a cup shaped bowl was reported from Periakanal in Idukki District and three bichrome pots (Black and cream colour with designs like bands and triangles) have been unearthed from Poduvacherry (Figure 3), and a pot having black geometrical designs was reported from Kodiyeri in Kannur District. Painted pottery was found in Anakkara also. Decorated shreds were found most of the sites having urns/jars as beaded or coir/thread impressed decorations on the shoulder portions of urns. Russet coated painted wares are reported from Cheramangad, Engandiyur, Thiruvilamalai and Nattika and Kattakampal in Thrissur, Anakkara and Thadukkassery in Palakkad, Ambalavayal in Idukki (Figure 4a), Maniyur (Figure 4b) and Chathanparamba in Kozhikode and Kuttippala and Vattakkulam in Malappuram (Ambily, 2021). Pattanam in Ernakulum district also have russet coated painted ware (Abhayan,2018:168) Russet coated painted pottery is dated 3rd century CE to 3rd century BCE and generally consider the megalithic-early historic pottery (Chedambath,1999:93-94). But recent excavations in Kodumanal in Tamil Nadu revealed an early date which goes back to 5th century BCE (Rajan,2020: Webinar talk).



Figure 4 a&b. Russet coated painted ware, Ambalavayal, Idukki and Maniyur in Kozhikode (Courtesy: Rachel Varghese;. Sahapedia.org and Krishnaraj. K)

Six terracotta hooks/claws like projections inside the rim portion of urn burials have been reported at Vellakkunnu in Kannur, Porkkalam in Thrissur and Feroke/Chenaparambu in Kozhikode have great importance. These potteries have parallels in the urns from Adichanallur in Tamil Nadu, which is now in the Madras museum. There, two hooks of horns were found at two sides of inside the urn just below the rim portion evidently for hanging or suspending pots or other articles. But in Feroke nothing could be found inside the urn. Similar horns on the outside of urns have been reported from Bangalore as well (Aiyappan,2007:19-20).

Black and red ware, black ware, black polished ware, some chocolate slipped ware, white dotted black and red ware, red ware and red slipped and a few grey wares are the types of pottery noticed from the Pamba basin. The shapes include jars, pots, bowls, lids, dish, basin and ring stands. Jars are unearthed from Vandiperiyar, Kavumbhagam, Kodakulanji etc. Jars from Vandiperiyar have decorations too. Pots are reported from Vandiperiyar, Chenkalthadam, Phoothankara, Niramakulam etc. Bowls are reported from Vandiperiyar locality I, Phoothankara and Niramakulam. One cup-like bowl of black and red ware with a round base was also reported from the Pamba basin. Similar type mentioned from Periakanal in Idukki district as well. Lids and ring stands are reported from Niramakulam and Phoothankara. White dotted black and red ware and black ware shreds unearthed from Niramakulam. Dish and basins are also identified from Niramakulam. All these types have differences in size and shape.



Figure 5 &6. White dotted painted shreds from Oliyani in Kottayam and Handmade decorated pottery from Velam in Kozhikode (Courtesy: P.Rajendran and Krishnaraj .K)

Lack of proper information regarding the pottery from the other reported burial sites in the Pamba basin except Niramakulam (Figure 7) is a problem for the systematic study of the same. Nira-

makulam pottery is handmade and both hand and wheel-made. The pottery seems to have been made using well levigated clay and has fine to medium texture. Nearly half of the shreds found have mica content visible in its core, internal and external surfaces. Few shreds have sand particles also. Burnishing and polishing marks are visible in almost all the shreds. Grey shreds and chocolate coloured pottery are very less in number. Dotted white paintings are found on black ware and black and red ware shreds. Slip is also present in diagnostic shreds. Bowls form the highest percent in pottery. Pots come next and ring stands and lids follow. Dish and basins are very few in number. Featureless/perpendicular rim found here is a common feature, and noticed in the megalithic bowls in almost all the excavated site like Machad, Pazhayannur, Kuttikkol, Porkkalam and Arippa etc. Most of the bowls from Niramakulam have thin sharp rims, bulbous body and saggar base. Black ware and black and red ware are the common varieties noticed among the Bowls (Ambily, 2017).



Figure 7. Rings stands, lids, pot, cup shaped vessel and bowl

Miniature pots to large pots have been identified in the cist. One miniature pot is a black and red ware with a carinated shoulder and pointed base. It seems like it was used for some ritualistic purpose during the time of erecting the burial. Some other pots are short necked with simple, beaked, quadrangular everted rims and some of them have a slender neck and wide mouth. Most of the shreds are red ware. Lids and ring stands are of black polished variety. No red colour or black and red ware varieties noticed among these types. The lids and ring stands have similarities with the pottery of Kuttikkol, Oliyani, Arippa etc. Similar types of black polished ring-stands, lid with tiered knobs, black and red ware bowls and pots were reported from Adichanallur in Tirunelveli district of Tamil Nadu that are now placed in the Government Museum at Chennai. One important type of pottery from the site was the chocolate coloured fine ware. It has not been reported from any of the megalithic sites in Kerala hitherto. It is noticed that the rim por-

tion of the small pot is also made in chocolate coloured clay. Chocolate colour might be the result of heat applied on the pottery during the time of making or due to the nature of clay. White Paintings as dotted lines on black and red ware potsherds has been reported from Oliyani in Kottayam and Poredam in Kollam excavations in Kerala (Rajendran, 1995: 2005). Here as well there are potsherds with the dotted lines, although the white painting has faded. Dishes and basins have everted rims and very few in numbers. Grey colour shreds are only few reported in Kerala. Poredam and Arippa in Kollam, Malambuzha in Palakkad, Cheruparamba, Keralthervu and Citrari in Kannur are the sites having grey ware reported earlier. Black and ware pottery are very common in almost all the megalithic monuments. Black ware and black slipped ware and red ware also as usual found from the burial sites of Kerala (Ambily, 2021).



Figure 8. Cup-shaped vessels with lids and ring stands, Ilaitaikulam, Tamilnadu (Courtesy: R.R. Srinivasan)

The cup shaped black and red ware unearthed from Niramakulam has similarities with vessels found from Ilaitaikulam in Tamilnadu. Those were found along with lid and ring stand which are exactly fit for the lota/goblet. In Niramakulam evidence of lid and ring stand was absent and the base of the vessel is round while Ilaitaikulam has a pointed base (Figure 8).

Identification of rims of black and red ware is difficult as sometimes if the rim belongs to black and red ware family there is a chance for misunderstanding it with black ware and vice versa. So in some cases it is difficult to conclude whether it is black ware or black and red ware. The large amount of potsherds within the Cist is the indication of disturbance of cist and the evidence of other vessels placed along with other funerary goods. Lack of evidence of base portion of vessels among the potsherds indicates that most probably all the vessels have round or saggar base. Presence of ring stands from the site is supporting this. It is difficult to keep the round based vessels on a flat surface.

So ring stands are necessary to keep the vessels. Trend of keeping some vessels on ring stands and not directly to the surface might be part of some unidentified ritualistic activity prevailing in the megalithic period. Compared to the other megalithic sites in Pamba basin, many intact pots were collected from the cist burial at Niramakulam and most of them were wheel made, thin and well fired. Some of the small pots interred seem to bear ceremonial value than any utilitarian value.



Figure 9&10. Lipped bowls (Neolithic affinity) and legged jars from Ummichipoyil (Courtesy: Abhayan.G.S)

Most of the pottery noticed from the Pamba basin shows similarities with those found from previous megalithic excavations in Kerala and adjoining areas like Coimbatore, Adichanallur, Brahmagiri, Nagarjunakonda, Pochampad, etc. (Murthy, 2000). Pottery (channel spouted vessel) reported to have Neolithic affinities such as from Ummichipoyil (Figure 9) and Citrari and early historic pottery like russet coated painted ware from Anakkara, Enagandiyur, Chathanparamba, Kattakkambal etc. were completely absent in the Pamba basin as of now.

Beads of various shapes and dimensions made of carnelian (with etched decorations comprising eye designs and horizontal, vertical and radial lines), jasper, orthoclase-feldspar, glass, wax, agate, bone, terracotta, jade, hone, quartz crystals, copper /bronze etc. have been discovered from a number of burials. Beads made of an intermediate metal and pendants of paste were also unearthed at Porkkalam and Machad respectively (Gurukkal and Varier, 1999). Carnelian beads were reported from Mangadu in Kollam district, Porkkalam in Thrissur, Valiyangadam/Kattappana and Nariyanpara in Idukki district (Figure 11), Chingachira in Palakkad, agate, crystal and carnelian from Chathanparamba, Viyur (Figure 16) and Kinaloor in Kozhikode, Kandathamvayil in Wayanad, chert, quartzite and carnelian beads from Kadanad (Figure 13&14) in Kottayam district, carnelian, jade, quartz and copper/bronze beads from Chellarkovil (Figure 12&15), beads

from Alappara and Nariyanpara in Idukki, beads from Veliathunadu, Kurumassery in Ernakulum district, beads of carnelian, agate, cherty jasper, crystal and orthoclase, feldspar from Machad and Pazhayannur, Engandiyurr in Thrissur, and Malambuzha in Palakkad, terracotta bead from Ummichipoyil and carnelian beads from Kudol/Peralam in Kasargod are some sites having beads reported from Kerala (Ambily, 2021).

Except Niramakulam no other sites have beads reported from the Pamba basin. Fifteen beads made of carnelian have been unearthed from Niramakulam (Figure 10). Among the beads similar decorated/etched carnelian barrel shaped beads with three vertical lines at the centre were reported from the megaliths of Machad and Pazhayannur. Tablet shaped decorated/etched beads were very common in the megaliths of South India. The sites include Maski, Vellalur, Salem, Kupgal Wayanad, Palghat, Porkkalam, Machad, Pazhayannur, etc. (Mehta and George, 1978, Murthi, 1994, Ramachandran, 2000).



Figure 10. Carnelian Beads from Niramakkulam



Figure 11&12. Carnelian beads, Nariyanpara and Quartz beads from Chellarkovil Idukki (Courtesy: Krishnaraj.K)

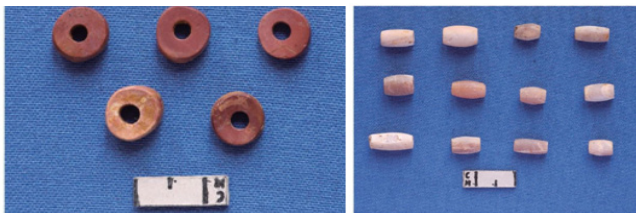


Figure 13&14. Stone beads from Kadanad, Kottayam District (Courtesy: Abhayan G.S)



Figure 15&16. Copper/bronze bead,Chellarkovil ,Idukki and stone beads from Kakkodi and Viyur in Kozhikode (Courtesy: Krishnaraj.K)

Most of the stone beads might be made by selecting a large block of stone and then breaking or sawing it into smaller blocks or beads rough outs and beads rough outs are groped or carved to achieve the final bead shape. Chalcedony and agate are the raw materials used for making carnelian beads. Both these materials are less found in Kerala. Hence it might have been imported from outside, probably the Deccan area through trade or exchange. Further study is essential for answering such questions. None of the beads found to have been in an unfinished stage and it suggests that there was no local base for the bead industry. Some of the SEM images of Niramakulam beads show deep parallel grooves on the rugged surface indicating the use of diamond drill technique and the holes were made from both the sides. Shallow parallel grooves are also noticed in some of the specimen which might be made by using copper tubular drills (Ambily, 2021).

Varieties of iron objects like swords, tanged daggers, wedge shaped blades, barbed arrowheads, hanger (Figure 17) and hooks, nails, spindles, spearheads, knives, rods with forked end, tripods, axes, bayonet like object, chisels, bill-hooks, iron wedges, flanged spades, hoes, shovels, spades, sickles and ploughshares (Figure 19&20), lamps, crowbars, hook-lambs, simple rods, hanger, fish hook (Figure 18), tridents, etc. were unearthed from various excavations from Kerala (Gurukkal and Varier, 1999). Apart from these, a stick identified as ‘Narayam’, ‘Urumi’, human and animal forms were also reported among the iron objects (Ambily, 2021).

All these objects can be classified into weapons, cutting tools/agricultural implements, household/domestic, toys or ritual objects, writing material, fishing tools and other ritualistic tools. Tripod , lamps, trident ,crowbars, hook-lambs and simple rods might be used as ritualistic objects, like swords, ‘Urumi’ tanged daggers, wedge shaped blades, barbed arrowheads, spearheads, tridents, knives, rods with forked end,

bayonet like object as weapons , ‘Narayam’ as writing material, hoes, bill hooks ,chisels, wedge and ploughshares, axes , shovels, spades. as agricultural /cutting tools, bullock with animals and plough, human and animal forms as toys or ritual objects ,nails, spindles, knives, sickle, tripod stand , hanger, nails, lamps as domestic or household objects. A fishhook has been identified from Nalloor in Calicut is a rare example of evidence of fishing in the Megalithic period. Some of these tools have multiple uses as well. Chisels might be used for cutting stone, wood and even metal, axes for clearing trees, cutting logs, as a weapon and ceremonial symbol, sickle for agriculture (Harvesting, or cutting fodder) and domestic purpose, daggers as weapons of offense or ornamentation, arrowhead for hunting or war, bill hooks are for slashing vines and hooking branches, hoes for digging up the roots, to prepare a seed bed, weeding and ridging, etc. (Chedambath, 1997:281). Anthropomorphic figure from Punnol (Ghosh,1989:353), zoomorphic forms from Valiyapadam (IAR,1989-90:45) and three serpents (Figure 21) from Oliyani (Rajendran,2005:41-42) are the animal and human forms reported from Kerala. Narayam or “iron stick” reported from Punnol (Ghosh,1989:353) and iron “Urumi ” reported from Srimulnagaram in Ernakulum district (Ismail Pallipram, 2017). Long rod and long rod with curved edges have been reported from Kadanad in Kottayam district (IAR, 2007-2008:81-85). A pair of bullocks in cast iron along with a plough and yoke and an elephant were found in Angamaly in Ernakulam district (Chedambath,1997:284).



Figure 17&18. Iron hanger, Kakkodi and iron fish hook, Nalloor, Kozhikode (Courtesy: Krishnaraj.K)

Apart from this evidence, iron slags and ingots were also found from various sites in Kerala. Iron Age smelting sites reported from Ezhuvanikkonam in Thiruvananthapuram having burnt wood, charcoal, iron slag and smelted crucible with laterite gravel (IAR, 1995-1996:46). Abhayagiri in Kollam has crucibles (Figure 24) , iron slag, smelting blocks of iron and charcoal (IAR, 1995-96:46), and Varanampadam in

Thrissur has iron slags and large blocks of tapped slag. Other sites having iron slags were reported from Mangad in Kollam, Nalancheri and Manjalur in Palakkad and Periyar river valley (Abhayan, 2018:180), etc. A terracotta crucible (Figure 23) was reported from Kallimali in Idukki district (Sandra.et.al, 2017). Iron ore mines are also reported from Payippara in Ernakulam district (Selvakumar, 2005:74)



Figure 19 &20. Ploughshares from Kuruvattur in Kozhikode and Kongad in Palakkad (Courtesy: Krishnaraj.K)



Figure 21&22. Iron serpents from Oliyani and iron implements from Kadanad, Kottayam (Courtesy: P.Rajendran and Abhayan.G.S)

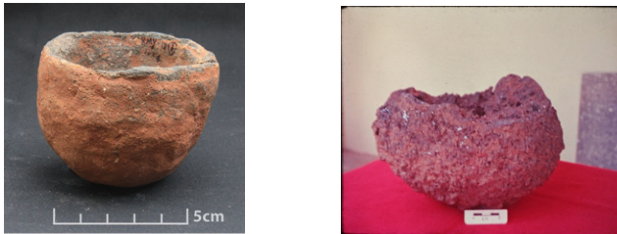


Figure 23&24. Terracotta crucible, Kallimali, Idukki and iron ingot, Abhayagiri in Kollam (Courtesy: Sandra and P.Rajendran)

Iron sickles from Chenkalthadam (IAR, 1990-91:33), blade from Puliur (Sathyamurthy, 1992:25), axe from Karimpaloor (IAR, 1990-91:3), bayonet like object from Valanjavattom (Mathew et al., 2006:14), lamps and swords from Kavumbhagam (Menon, 1975:24), lamp from Thiruvalla locality-I (Nambyar, 1932: 61), sword from Il-limala Bridge (Mathew et al, 2006:14-17), rusted and coated iron implements from Kavumgumprayar (IAR, 1969-70:59), iron implements from Mudimala (IAR, 1992-93:113), few iron pieces from Njalikkan-

dam (Archana, Personal Communication), tools from Phoothankara/ Enadimangalam (IAR, 1960-61, 1961-62: 21 & Abhayan, 2019) are the sites having iron implements already reported in the Pamba basin. As mentioned earlier eight iron implements including sickles, knives and sickle cum knife, one iron nail, and three unidentified objects have been unearthed from the excavated site at Niramakulam. Iron slags also have been collected from the vicinity of the site Niramakulam and near Kurichy locality-I (Figure 25 & 26). The iron implements from Niramakulam were probably used for agricultural and domestic purposes. The sickle seems to be used for reaping the crops and knives might be used for domestic activities. Likewise, sickle from Chenkalthadam and axe from Karimpaloor were also might have been used for domestic or agricultural activities. Swords from Illimala Bridge and Kavumbhagam and bayonet-like objects from Valanjavattom might be used for hunting or war purposes. Lamps might be used in houses for domestic purposes.



Figure 25 & 26. Iron lump/slags and potsherds including plane Red ware and impressed shreds found near the stone trough, Kurichy Locality-I

Iron implements that were recovered from the cist at Niramakulam (Figure 27) were comparatively small in size and mainly included sickles and knives. Small sized iron nails and some unidentified objects were also collected from the cist. Sickles of similar type have been reported from other megaliths in Kerala and outside. These types of iron implements are still vogue in the region. Other unidentified objects have resemblance with those reported from the sites like Oliyani in Kottayam, Machad in Thrissur and Kadambapur and Pochampad in Godavari basin etc. A quantitative chemical analysis was done by using Thermo Scientific Niton XL3t XRF Analyser to know the properties of iron implements from Niramakulam. The detected elements include iron, copper, nickel, chromium, phosphorus, zirconium, titanium, vanadium, sulphur, molybdenum and undetected elements. The highest percentage of iron was found in a knife which is 95.15%. The low-

est percentage of iron was found in another knife which is 75.78%. The percentage of waste (Undetected elements) comes second and Nickel comes third. Percentage of chromium, phosphorus, zirconium, titanium, vanadium and sulphur are ranging below 1%, except copper. The percentage of copper is ranging from 0.315 to 1.62 in implements. Except iron, copper and nickel, other metals are even absent in some specimens. It is quite interesting to note that the iron implements from Niramakulam are not as pure as the iron implements found in other parts of Kerala and neighboring states. The impurities within the iron implements are also different from them. Selection of the ore for the extraction of iron and technique might be the reason for this. However, both the implements and slags from the site have the same impurities giving a possibility that these iron implements were manufactured locally by using these ingots/slugs. Unfortunately, the location of ore for the extraction of iron for this purpose could not be identified. But presence of iron slags from the premises of megalith at Niramakulam and Kurichy area suggests that the implements might have been made locally.



Figure 27. Iron objects from Niramakkulam

One of the noteworthy features is a stone trough (Figure28) most probably used for storing water during the iron smelting has been found at Kurichy locality -I along with iron slags and potsherds. Interestingly, a clear slicing/cutting mark (Figure 29) has been noticed in two of the iron slags which might have happened during the time of tool making process. It can be considered as an evidence of iron-working locally.



Figure 28. Stone trough found at Kurichy Locality-1



Figure 29. Cutting/slicing mark on iron slag, Kurichy Locality-1

In Kerala very few iron specimens have been studied properly. One specimen from Pazhayannur in Thrissur District is analysed for the same. Abhayagiri (IAR, 1995-96:46), Ezhavanikonam in Bharathannur, Trivandrum and Tenmala (IAR, 1990-91:33) are some of the iron ore smelting/melting areas and evidence of slags were reported from south Kerala. 35 % of iron was found in the slag from Bharathannur, 35% and less than 0.5 % was reported from Abhayagiri (IAR, 1995-96:20). As mentioned before, the highest percentage of iron is found in a knife from Niramakulam which is 95.15%. The lowest percentage of iron found in another knife is 75.78%.. The highest percentage of iron content noticed in one among the three slags/ingots is 78.78% and the lowest percentage is 59.85%.The Pandalam area of the Pamba basin, where laterite Menhirs are found, are rich in iron content (Ambily, 2017). Unlike the iron implements from Pazhayannur, all the implements from Niramakulam were analysed. Only one hook found from the Pazhayannur cist was used for analysis. The result was 99% pure iron. Apart from iron, Manganese, aluminium and cobalt are also found as minute impurities in hook. Megalithic sites at Tagalghat and Khapa and an early historic site at Dhatwa also got 99% pure iron (Mehta and George,1974:20-23) in other parts of India. But the percentage of iron content varies from implement to implement and slags in the case of Niramakulam.

Bronze includes jars, vases, lamps, bowls knobbed lid and bells from Pattapiriyam in Malappuram, Eyyal and Thiruvilamalai in Thrissur and Pulimath in Thiruvananthapuram district in Kerala. But no bronze objects have been reported from the Pamba basin hitherto.



Figure 30. Bronze/copper object from an urn burial, Vellakkunnu, Kannur
(Courtesy: Ramesh N.K)

Bangle from Arippa, Kollam (Figure 31) , dish from Ambalamedu in Idukki, four legged stand, bell and unidentified ornament (Horse ornament or equipment?) from Valiyangadam/Kattappana in Idukki district ,male torso from Thalakkode in Malappuram (Figure 32) and bowl from Cheramangad in Thrissur district are the sites having copper objects reported from the megaliths of Kerala. Bronze/copper globular object with antennae like projection reported from Vellakkunnu in Kannur District (Figure 30). The less percentage of copper objects from the burials indicates the facts that copper was a quality material in those times or was not available locally or was not a fashion in megalithic period. Typology of copper objects restricted to vessels, ornaments for both human and animal (Horse) and in the form of figurine, which might be a toy object or had some ritualistic value. Copper is sometimes found with bronze and gold as well.

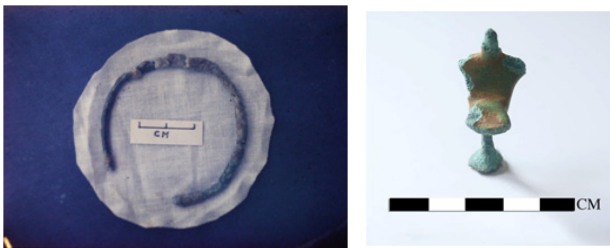


Figure 31&32. Copper bangle from Arippa,Kollam and male torso? from Thalakkode in Malappuram District (Courtesy: P.Rajendran and Krishnaraj.K)

One shaped object from Puliur in Alappuzha was the only copper object reported from the burials of Pamba river basin as of now. Two copper rings with thin gold covering were reported from Kattipoyil in Kasargod district (Jayashree, 2005:32-33), an earring from Arippa (Figure 34), and a leaf from Kadanad were the gold objects (Figure 33) reported from Kerala. Six pieces of gold ornaments from Puliur in Alappuzha district were reported from the study area so far.

Funerary goods in the Iron Age

As per the evidence, the Pamba river basin has the richest collection of gold objects from the burials. All the gold objects seemed to have been used as ornaments.

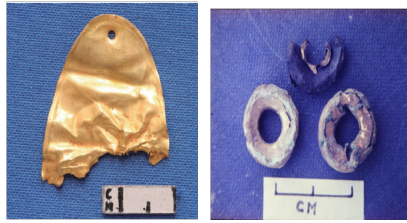


Figure 33&34. Gold leaf from Kadanad, Kottayam and ear rings from Arippa, Kollam (Courtesy: Abhayan.G.S. and P.Rajendran)

Microliths were found very close to the dolmen found at Kanichattupara in Ernakulam (Figure 36), at the excavation at Anakara in Palakkad and from an urn burial at Nalloor in Kozhikode (Figure 35). Grinding stones, four legged querns and rollers /pestles were reported from Panunda, Kanichattupara (Figure39), Machad and Pazhayannur. Celts/axes were reported from Kudol/Peralam, Edayadukkam and Um-michipoyil in Kasargod district, Kallimali (Figure 37) in Idukki district and adzes were unearthed from Oliyani/Kunnoni in Kottayam district (Figure 38) have also been reported from the burials in Kerala. A peculiar polished stone also had been reported from Kanjur in Ernakulum district. Stone tripods have also been reported from the rock cut cave at Mangad in Thrissur



Figure 35&36. Microlith from Nalloor in Kozhikode and Kanichattupara in Ernakulam (Courtesy: Krishnakumar.K &Gangaevi.M.R)



Figure 37&38. Polished axe from Kallimali, Idukki and Adze from Oliyani, Kottayam (Courtesy: Abhayan G.S and P.Rajendran)



Figure 39. Saddle quern from Kanichattupara, Ernakulam

Stone benches and pillars with and without decoration have been reported from various Rock cut caves of Kerala. All these materials were used for domestic, agriculture and ritualistic purposes. Microliths and stone axes and adzes might be the continuation of Mesolithic/ Neolithic tradition in Iron Age/Megalithic culture.

Pamba basin also has stone axe/celt and it was reported from the megalith of Kavumgumprayar in Pathanamthitta district. Terracotta figurines like bearded heads of men, torso of a woman and parts of horns, possibly of a bull from Kodanand, bull from Elanthikkara and figurines from Kunnukara in Ernakulam, applique terracotta mother goddess form Malambuzha in Palakkad, human head (Figure 40) from Thrikkanya in Thrissur (Abhayan, 2020:173), bull/goat head from Kandathamvayil in Wayanad, terracotta dogs from Feroke/Parambathali and terracotta eagle head like figurine from Perumundassery in Kozhikode were unearthed from various sites (Figure 41). All these might have been in use as toys, decoration or for the purpose of rituals. It also shows the importance of animals in the Iron Age/Megalithic time. Except pottery no terracotta objects were reported from the Pamba basin so far.



Figure 40&41. Terracotta human head from Thrikkanya, Thrissur and eagle head like figure from Perumundassery, Kozhikode (Courtesy: Abhayan G.S and Ramesh N.K)

Rice husks were reported from Parambantalli in Kozhikode and Chokkanad in Idukki district and an unidentified grain was identified at Arippa in Kollam district (Figure 43) Paddy husk/ash was said to have been found from a clandestine excavation of megaliths by local people around Neeloor in Kottayam District (Ajit Kumar and Nihildas, 2014:682).



Figure 42&43. Rice husk from Chellarkovil ,Idukki and charred grains from Arippa (Courtesy: Krishnaraj.K and P.Rajendran)

Charred grains of rice from a rock cut cave also have been reported from Vadakkanchery in Thrissur district (Chedambath,1997: 271) Rice husk has also been noticed in one of the potsherds found at the site Pallumala in Thrissur district. Recently grains with rice husk were found accidentally during a construction work at Chellarkovil near Mayiladumpara in Idukki district (Figure 42) (Vineeth K.G, Local resident. Personal Communication,2020). No botanical remains have been discovered or reported from the Pamba basin so far.

Charcoal identified from sites like Venjaramoodu in Trivandrum, Ezhuvanikkonam, Abhayagiri and Mangad in Kollam, Oliyani in Kottayam, Nannagadikkunnu in Palakkad Muruganpara in Idukki, Peralam in Kasargod etc. evidence of ash reported from Anjunadu valley in Idukki and Padiyanattumuri Desom in Kozhikode etc. Charred wood has been collected from Kuttikkol in Kasargod district as well (Abhayan, 2018:176). Niramakulam and Enadimangalam/Phoothankara in Pathanamthitta district of Pamba basin have evidence of charcoal reported so far.

Graffiti on pottery has been reported from the various sites in Kerala. One of the important is a post firing graffiti of cattle was found on a red ware jar from the rock cut cave at Ulliyeri in Kozhikode (Figure 43). A fragmentary inscription in a menhir reported in Kaccanpara in Idukki district (Sathyamurthy, 1990:27). An interesting stone with Pictograph or ideograph was reported from the urn burial site at Peringassery in Idukki District (Figure 44)

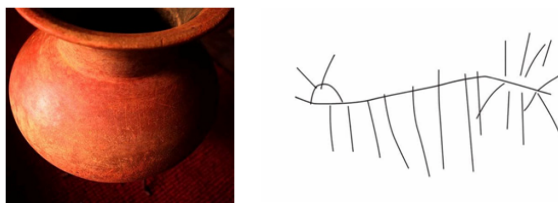


Figure 43. Post firing graffiti on red ware (cattle) from Ulliyeri in Kozhikode (Courtesy:Krishnaraj.K)

White painted motif on a Dolmen reported at Chenganperu, Dindukombur and Nanchivayal of the Anjunadu Valley (Nihil-das,2014:181). Except white dotted painting on the pottery from Niramakulam nothing has been reported from Pamba basin so far.

Punch marked coins are also said to have been reported from Thiruthur in Thrissur district (Jaseera,2020:455). It is also said that punch marked Roman coins were also found very close to the rock cut caves at Eyyal (Gangadevi M.R, Personnel communication). Some of the coins were said to have been found from the burials in the study area. But no evidence of coins has been identified at the Pamba basin as of now.



Figure44. Graffiti on a stone slab found below an urn burial at Peringasserry, Idukki (Courtesy: Jee Francis Therattil)

Chronology of Burials

Generally the Iron Age/Megalithic period of Kerala is considered in between 1000 BCE to 500 CE. Kerala has a limited number of radio carbon dating available so far. Initially B.K Thapar provide a tentative date of Porkkalam ranging from 3rd century BCE to 1st century CE based on the presence of etched carnelian beads with designs, which have parallels with Brahmanabad, Brahmapuri, Maski, Sanghanakallu etc. After him George and Mehta excavated Machad and Pazhayannur and ascribed to a period ranging from 2nd century BCE to 2nd century CE on the basis of beads, ceramic and iron implements (Jayashree, 2007). Lots of tentative chronology has been made by various scholars, who worked on megaliths thereafter. The earliest radiocarbon date of Kerala goes to Mangad in Kollam district. Two dates obtained for the

sites are 2850±90 and 2890±70 years BP (Sathyamurthy, 1992:32). Another C14 date of a cist burial is at Oliyani in Kottayam district that provides an age of 810±80 years BP (Rajendran, 2005:45). Thermoluminescence date of the urn burial site at Poredam in Kollam district gives an age of 1375±15 years BP (Rajendran, 2012). Recently two more sites obtained radiocarbon dates and they are from Kuttikkol in Kasargod district and Nannagadikkunnu in Palakkad. Kuttikkol has four dates (328±19, 385±18, 430±19 and 2526±20 years BP) and Nannagadikkunnu has two (2350±30 and 490±30 years BP) Both these sites showing a wide range of time period starting from 7th to 6th century CE from Kuttikkol and 4th to 5th century BCE from Nannagadikkunnu to 15th century CE. Excavators had an opinion that the later dates of these sites could be because of later disturbances. If it is not so, the upper limit of Megalithic culture in Kerala goes to 15th century CE (Abhayan, 2018:176-178). The site Oliyani also provides a later date which goes to 11th -12th century CE. However the later dates for the samples from Kuttikkol and Nannagadikkunnu were collected from disturbed deposit, we need more scientific dates to fix the upper limit of Megaliths tradition of Kerala in a conclusive manner. (Abhayan, Personnel communication)

The AMS dates of Niramakulam from the Pamba river basin ranging from 4th century BCE to 4th century CE. The earliest date (2190±30 years BP) is coming from a depth of 164- 185 cm within the cist and later found outside of the burial which was from 96-105 cm depth from the surface (1790±30 years BP). These dates are significant for the fact that they are the earliest date of sepulchral activity and artifacts from the hill range of the Pamba basin as of now. Second importance is that the dates divulge human activity of two different periods of time. There is a chance for the continuation of Megalithism and settlement in the same area even in the early historic period too. Early historic potsherds were also collected from very next to these monuments.

Conclusion

Grave goods were deposited with the dead in many periods of the human past, from the late Palaeolithic to the Middle Ages and the more recent past (Harke, 2014). It is said that funerary goods may be considered as votive deposit, which are for the use of deceased's journey to life after death or offering to the gods. Grave goods contain information about the economic fluctuations and social changes experienced by the past societies responsible for their deposition (Izquierdo-Egea, 2013). The grave is also considered as the residence of the departed. Many

aspects like ritual, belief, and belief after death ,racial affinities ,family groups ,clan groups, division of labours, age, sex, nutrition, paleo demography, paleo diseases, paleo climate, craft specialization, trade, chronology, hierarchies and many facets of human past can be studied through burial and burial goods. Different types of burials goods might be the indication of social, religious or economic differentials that had been prevailing in their society/clan/group. Age, occupation and gender also might have been taken into consideration while offering funerary goods.

Very limited materials/burial goods are available in Pamba river basin as of now. Hence it is difficult to ascertain conclusions for several aspects. According to the available evidence certain observations are made in respect of funerary goods. As in the case of Kerala, Pamba basin also does not have the evidence of complete skeleton remains. Hence it is possible to say that megalithic people of Pamba basin followed a fractional or secondary burial practice. Burial pottery shows similarities with those found from previous megalithic excavations in Kerala and adjoining areas except some wares discussed earlier. However, chocolate colored shreds are reported from Pamba basin only. Division of labours can also be understood through burial goods. Ceramics itself is an indicator of the existence of a highly advanced group of potters in Pamba river basin. Presence of carpenters/blacksmiths also can be traced through the presence of iron implements such as chisels, axes, bill hooks etc. from the burials. The finding of the iron slags/ingots and implements from the same locality is the indication of the existence of iron working people. Evidence of manufacturing of iron is also obvious from the stone trough and associated iron slags having cutting/slicing marks. Copper and gold objects from a few sites indicate that they might have been extracted or processed locally or traded from outside. Raw material sources of copper and gold have not been reported from Kerala so far. However, until we get the evidence of manufacturing of these metals, local trade should be considered as a source. Carnelian beads from the excavation at Niramakulam indicate the presence of trade activity in those times. Because raw material source of carnelian is also not reported from Kerala hitherto. The Decan and Gujarat areas might have been the source of carnelian beads in those times. The sickle from Niramakulam might be an indicator of agricultural activities in the study area. Erecting megalith monument as part of the death rituals in the Pamba basin might have started during the late Neolithic times onwards as indicated by the example of

Neolithic tradition of “an axe“ found in one of the burial monuments at Kavumgumprayar in Thiruvalla, Pathanamthitta district.

The AMS date of charcoal samples from Niramakulam clearly shows an antiquity of 4th century BCE for the megaliths of Pamba basin. The significance of carbon dating results are, the sample number one represents the earliest human activity and the artefacts from the hill range of the Pamba river basin and sample two is the later date of the Megalithic site in the study area. This indicates that there is continuity in using the site again by the members of the same family or clan or society over a large period of time. More excavations and scientific studies are needed to answer several unanswered questions regarding the mortuary/grave goods.

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