

## **Archaeology of the Proto historic Iron Age: South Indian Context and Evolutionary Structure in Sri Lanka**

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The Protohistoric Iron Age is the prominent techno-cultural phase after the Prehistoric period (Mesolithic era) in Sri Lanka. Thus, this study aims to give a brief account of the background of the Protohistoric Iron Age in Sri Lanka and to discuss how the Protohistoric techno-cultural setup has been shaped together with the spatiotemporal distribution of archaeological sites in parallel to various trends. Furthermore, while elaborating specific characteristics of the period, it is trying to understand the still unresolved ideologies that related to the Protohistoric Iron Age in order to understand its influence over the new trends in Sri Lankan history.

### **South Indian context: Pattern of distribution**

The Protohistoric Iron Age, which corresponds with the Proto and Early historic periods of South India and Sri Lanka, has some inherent geo-physical features and a broad cultural identity. Hence, in the study of the period it is necessary to pay an utmost attention to the techno-cultural trends that connected to the period. Protohistoric Iron Age [syn. Early Iron Age (EIA)] introduced several significant cultural features to Southern India and Sri Lanka for the first time (Deraniyagala 1992: 709), and among them the iron technology, creation of pottery on a potters' wheel, paddy cultivation, irrigation technology and using horse hold a more significant place. Meanwhile, in the Sri Lankan context, the appearance of iron technology, pottery (notably Sri Lankan variant of Iron Age Black and Red Ware (BRW), the horse, domestic cattle, Megalithic burials and paddy cultivation were its most notable features.

It seems that the acclimatization has been occurred with the influx of Megalithic Black and Red Ware (BRW) Culture of the Iron Age in Southern India (Seneviratne 1984: 221-307). The origin and the chronology of Megalithic culture and how it was spread throughout the region has still not been fully recognized. However, some believe that this has entered Indian peninsular through the transition routes spread from Baluchistan, Oman Gulf, Eastern Africa and South Eastern Asia (Seneviratne 1996: 378). There are a lot of Megalithic burials and settlements that used iron technology in a large scale are scattered throughout in the peninsular India. However, it should be kept in mind that all these Megalithic monuments may not be belonged to the iron used techno-cultural chronology. It is believed that the physical and socio-cultural assimilation of this complex has been occurred as a result of intermingling of Passage Chambers, Cists, Alignments,

Dolmens, Menhirs etc. that existed in the iron used communities of pure Megalithic culture with the remnants of Mesolithic, Neolithic and post-Jorwe Chalcolithic rural societies of Deccan and Southern India (Ramachandran 1980: 43-58, 75; Seneviratne 1996: 378).

It could be identified some special feature of this techno-cultural phase, that had been spared extensively in southern Deccan and southern India. Although it is considered this was introduced after Neolithic - Chalcolithic period in to the Indian peninsular outer world, the idea of the commencement of usage of iron in this area around 1200 BC has not been disproved. Hence, it could be assumed that the introduction of iron into the southern Deccan, making pottery on a potters' wheel, domesticated plants (such as Paddy, Millet), evidence of horse and Megalithic burials are occurred even in the 1200 BC. Meanwhile, Carbon 14 analysis revealed chronologies of 1029 BC, 1000 BC and 970 BC for Megalithic culture at Veerapuram of Andhra Pradesh and 565 BC and 785 BC respectively for Paiyampalli and Korkai archaeological sites (Seneviratne 1984: 281-282, Possehl 1994: 62, 80, 120).

It seems these cultural diffusions have been occurred through two major routes from Karnataka (Seneviratne 1984: 281-285). One route has been extended through central highlands of South India to reach the rich plains of Kerala and Tamil Nadu. This was evidence by the distribution of Urn burials that expands towards south rich river valleys of Vaigai and Chittar - Thambapanni (*Tāmrāparṇī*). It is important to note that the Megalithic layer of Korkai archaeological site is going back to 785 BC. According to physical remnants classification data, the burials of Tamil Nadu seem to be earlier and older than Megalithic sites of northern and eastern areas (Ramachandran 1980: 43-59).

The second route expands from Karnataka towards south-eastern to establish the Megalithic culture in the outskirts of northern Tamil Nadu (Senaviratne 1984: 281; Seneviratne 1995a: 70), while concentrating in Dharmapuri, Salem, and North-Arcot district and further spreading towards coastal areas of east by 4<sup>th</sup> or 3<sup>rd</sup> century BC. It is notable that the co-existence of Neolithic period in the northern Tamil Nadu up to 6/5<sup>th</sup> century BC.

The end of the Megalithic culture in peninsular India is marked with the fade away of the Megalithic burial tradition from the core areas of its origin. Although this tradition is faded away in around 4<sup>th</sup> century BC in lower Krishna valley and from core areas in southern Tamil Nadu around 1<sup>st</sup> century BC, it shows its existence even up to Christian era in several isolated areas. Meanwhile, its final stages are coinciding with the settlements with BRW, Arretine ware and Rouletted ware. Spread of north Indian social philosophies and political dominance of Mauryans led to suppress and change the native cultural hegemonies and the final stages of Megalithic culture was one concurrence and then assimilated into Proto-urban cultural trends as evident by the relative suppression of the proto-historic Black and Red Ware with the gradual spread of Roman pottery after 1<sup>st</sup> century BC (Hegde 1996: 356-358; Seneviratne 1984: 281-282; Thapar 1996: 359-367).

In general, the iron used Megalithic culture was spread from central Deccan to South India, particularly to Tamil Nadu, and Sri Lanka through highlands and river valleys from 1000 BC to 400 BC and it can be assumed that the people in those areas were absorbed this new techno - cultural trends. Especially they have mixed up with the Neolithic culture that prevailed in Deccan and maintained a relationship of a certain manner with

far southern Mesolithic culture. However, it has not been resolved that the wide expansion of Megalithic culture was based on either mass demographic diffusions or cultural diffusions, yet, both of these trends could have been fundamental for this (Dikshit 1987: 1-2).

Pattern of distribution of Megalithic burials and settlements is a complex phenomenon that depended on the geophysical matrix of the area. In peninsular India, several Megalithic burials are clearly located in the areas where the soil, raw materials and physiography are ideal for human activities, especially within the reach of mineral and other natural resources, and root connected area with exchange product economic system. Meanwhile it can be seen Chamber Tombs in the lateritic soil area of Kerala, Passage Chambers in the Granite prominent area in Karnataka, Cists and Dolmens in relation to Palni hills of Tamil Nadu, and other stone free and clay Urn burials in river valleys and alluvial soil areas in relation to their subsistence (Seneviratne 1996: 378).

The burial practices of Megalithic people indicate their belief in a life after death and worshipping their ancestral relatives (Seneviratne 1990: 145-152). These societies with kinship connections have laid burial deposits for lineal leaders at one or several times. Among the deposits various food specially serials, metallic, beads, jewelleryes and Black and Red Ware were found and believed to be deposited for future use of dead kinsmen. Finding skeletons places in a special direction and in various poses inside the tomb may be a depiction of rituals.

Social and economic status of the early stages of Megalithic culture does not show much difference than the prior Neolithic or Calcolithic cultures. Pearls and shell crafts of the primary Proto-historic Iron Age has been well established as an extension of the family based crafts together with various

varieties of raw materials. This led to specific products and relatively expanded external exchange route system that inter-connect and interact with various environmental systems. Craftsmanship and technical skills in the Early Iron Age of peninsular India shows a relative diversity exceptionally with usage of iron, gold, silver, copper, tin etc. and production of steel, making tools and household equipment, agricultural equipment, making beads with various rocks and mineral, and making pottery with fine clay using the potter's wheel. Graffiti marks on burned potteries that made on potter's wheel is a significant feature. There is an argument that these marks are symbols of the potters, the owners or the tribes. However, most believe that those can be the inherent symbols related to tribes or ancestry. Abundant Graffiti symbols in relation to BRW are also a notable feature (Ramachandran 1980: 60-63; Seneviratne 1996: 379).

Tools used for fighting and hunting are prominent among the iron tools remnants of Megalithic burials. Moreover, household equipment, tridents and other tools have also been found in small quantities. Facts on the usage of materials such as copper, gold and bronze have been disclosed from Megalithic places. The copper tools found are high in finishing quality and grave materials are stored frequently in small pots and placed in the tombs (Ramachandran 1980: 64-67). Production of beads during the Early Iron Age is seems to be a skilful industry. Beads made with semi-precious stones, glass, clay, wax and animal pins and bones and etc. made in various shapes and sizes are found in large quantities. The distribution of bangles and beads made of conch shells reveals that they have been much valued.

Finding mica in the Megalithic complex in peninsular India indicates the significance of their usage. Pottery that ware polished with mica have also been found. It has been found a purposefully laid layer of mica in a Urn

burial near Kochin (Cochin) of Kerala, a special incident. Deposition of mica chips in Adichchanallur burials in a way similar to Pomparippu burials in Sri Lanka may be due to some cultural relationship (Begley 1981: 48-169; (Seneviratne 1988: 121-122).

This environmental adaptation greatly influence for the permanent settlements, development of iron technology, excess food production using the plough, efficient usage of resources like animals and water during the early iron age. This trend led to the establishment and function of the archaeological sites in the banks and plains of perennial and semi- perennial rivers of South India, and further there has been a direct influence for the formation of Early Iron Age in Sri Lanka. (Champakalakshmi 1996: 392-397; Gunawardana 1996: 398-400; Seneviratne 1996: 378-384).

#### **Sri Lankan context: Pattern of distribution**

It is believed that the influence of the influx of Megalithic culture of BRW technology from the Peninsular India was the basis for the formation of Early Iron Age of Sri Lanka and the unique cultural features introduced by it led to create an institutional formation of the island (Seneviratne 1984: 237-307, 1996: 378-384). The expansion of this culture in peninsular India has been occurred as an outward expansion from Deccan and high lands of South India towards wide eastern and southern lower valleys. However, in contrary to this, the trend in Sri Lanka shows an inward expansion by moving from the near the coastal valleys of the island towards hill country in the central highlands probably due to its island nature, geophysical formation and limitations of the landmass.

Early Iron Age Megalithic sites in Sri Lanka shows a concentration in north-west (Begley 1981: 49-95; Deraniyagala 1972a: 1-17), and northern areas

(Begley 1967 : 21-29; Pieris 1917: 11-30, 1919: 40 -19; Ragupathy 1987: 171-174; Seneviratna 1984: 279-290). This could be due to demographic or cultural diffusions influx from peninsular India. Favourable and closely similar natural environment between north-western area of Sri Lanka and coastal valley areas of river Thambapanni in Thinnaveli of South India and physically narrow sea strait between two countries and various attractive resources may have influenced the migrations. Similar pattern of Megalithic burial formation and regional expansion in two countries, and chronological evidence will give clue for the migrations.

Even though it cannot be compared, in types and quantity with peninsular India, a lot of Megalithic burials have been identified in Sri Lanka. Cists burials have been the commonest form and there are some regional variations too. Meanwhile, it seems a concentration of Cist burials in the north central province of Sri Lanka. A little variant, where the cap stone is place at the ground level, that relatively common finding in upper and lower hill country, are called Dolmonoid cists (Seneviratne 1984: 221-237, 266). Extended burials could specially be seen in the northern parts, particularly in the lands with lime stones in Jaffna peninsula and Mannar. Clearly identifiable Urn burials are found from north-western areas of Sri Lanka. Here, depositing one or more large vessels in a pit and covering it by placing stones around in some instances are notable. This type of burials is found in Pomparippu and south-eastern area of Sri Lanka as well as in the area of Thambapanni in peninsular India (Seneviratne 1984). Small vessels that contain pins and bones, and other grave materials are called Pit burials. This type of burials can be seen in north-western areas and near the estuary of Yarn oya and they have also been reported from the sites where cists have been found. Dolmen type of burials is clearly made by placing a large stone slab horizontally on two other large, vertical and several feet high



stone slabs. The only Dolmen in Sri Lanka has been discovered from Padiyagampola of Maha oya basin in the western high lands (Rambukwella 2005: 20-51). Cairn circles are type of burials that made by placing stones in a circle like a *Stupa*. Very limited numbers of this kind of burials in Sri Lanka are found at Mamaluwa near Vavunia.

Citadel excavation in Anuradhapura is very important among the limited studies conducted to examine the Early Iron Age in Sri Lanka (Deraniyagala 1972: 48-169; 1992: 470, 708-711) because it gives a more scientific chronological stratification of technological - cultural sequence of Sri Lankan history. In addition to citadel excavation, Megalithic burials such as Pomparippu (Begley 1981: 49-95), Ibbankattuwa (Karunaratne 1994: 105 - 109), Galsohonkanaththa (Seneviratne 1984: 258-260) and the settlements such as Kantharodei (Begley 1967: 21-29; Ragupathy 1987: 57-62), Manthai (Carswell and Prickett 1984: 31- 81; Deraniyagala 1992: 709), Thissamaharamaya (Bopearachchi and Wijeyapala 1996: 59-77; Parker 1884: 1-97) as well as early inscriptions and literature sources are of great help to identify trends in Early Iron Age.

The first, deepest, layer of the citadel Anuradhapura excavation was belonging to the Mesolithic period and there were geometric-microliths together with large quantities of bones of hunted animals. It is presumed that the upper limit of the first layer goes back to the 2300-2800 years from the present (Deraniyagala 1992: 694). It could roughly be identified as the period that connected with the Pre-historic period beyond 900 BC. Second is considered to be a blank layer and silt deposition in it may suggest limited agricultural activities (Deraniyagala 1972: 13-23). The third layer is belonged to the Proto-historic period and it is sub divided as 3a and 3b according to its specific features (Deraniyagala 1992: 470-472). Evidence of usage of iron,

production of BRW, domesticated animals (cattle), facts on paddy cultivation, minor irrigation, rural cultures and crafting technology, and horse etc. are found for the first time from this layer (Deraniyagala 1992: 707-709). Stone tools have not been found at 3a or 3b indicates that iron technology surpass the stone technology around 900 BC. Fourth layer belongs to the Early-historic period which extended roughly from 500 BC to 520 BC was also divided in to sub sections as 4a and 4b according to its unique features (Deraniyagala 1992: 711&. This marks the shape of institutional structure formation in the Sri Lankan history. Beyond this layer, later historical periods could be reviled from the Anuradhapura excavations.

Proto-historic Megalithic sites shows a high distribution up to 900 - 500 BC in the country as evident by concentration of the archaeological sites in the coastal areas, north central plains, south-eastern and lower hilly areas of the island. It should be noted that the Carbon 14 chronological data for Ibbankattuwa Megalithic site that situated in the central part of the county range from 600 - 400 gives an idea the existence of Megalithic culture for several centuries (Bandaranayake 2012; Bandaranayake and Mogren 1994: 39-40; Deraniyagala 1992: 734; Karunaratne 1994: 105-109). However, in 2/1 century BC it shows the gradual disappearance of Megalithic culture in the country more or less similar to the trend in South India. Meanwhile, the lack of Megalithic symbols in Brahmi inscriptions of Sri Lanka could be taken as suppression of this culture (Seneviratne 1984: 284-289). It could be identified several trends in distribution of Megalithic culture in Sri Lanka. In the primary stages they were coincided with environmental factors and establishment was occurred across several fields that can be identified as an extended area and the nuclei.

As extended areas they have been concentrated in Jaffna peninsula, north-west and north-central areas could be taken as the extended area where there are some nuclei inside these areas such as coastal region of the Jaffna peninsula, south-eastern area, central Yan oya and Kala oya area of north-central province and lower mountain region. When taken as a whole it could be seen some pattern in the distribution of Protohistoric habitations and the burials which could probably be due to social and physical formation of the Early Iron Age.

In the primary stages location of them seems to be connected with their subsistence pattern which dependent on the environmental factors that suitable for the economy, mainly the coastal areas with ability to obtain maritime resources, hunting, animal husbandry or micro areas that convenient for limited agricultural activities. These conditions were highly responsible for the development of Early Iron Age settlements in the north and lower plains as evident by the establishment of Megalithic settlements and burials in the coastal line and in river valleys (Begley 1981: 49-95; Ragupathy 1987: 17-171). Moreover, concentration of Megalithic sites could be seen in dry and arid zones too. Meanwhile it could be seen some relative concentration in river valleys of wet zone and mountain region (Bandaranayake and Mogren 1994; Seneviratane 1984: 121-237).

The location and the expansion of the settlements mostly depend on the availability of water in the vicinity. Meanwhile, the perennial and semi-perennial rivers have been used as route network for inter-relationships with the resource rich central hill country for resource exchange. In this respect it is worth to mention that easy accessibility to underground water level of northern area, the availability of Megalithic burials near small water

reservoirs and the creation of burials near large reservoirs before making them as important factors (Begley 1981: 49-95; Ragupathy 1987).

Nuclei of the Megalithic culture of the island are coincided with the soil suitable for wet and dry agriculture. Red and reddish brown soil in Jaffna peninsula and narrow alluvial soil of north-western river valleys are of notable. Arid Latasole soil located beyond the north-western area are not suitable for cultivation. Hence, it could be seen a linear concentration of Megalithic sites in north-western area and as distributed clusters in the reddish brown soil of Jaffna peninsula (Seneviratne 1984: 239).

Vegetation has also been influence the formation of Megalithic sites. Except of some micro zones, vegetation of present Sri Lanka is considered to be a secondary growth. Ability of controlling the soil with fire without metal instrument in scrub forest in the northern area is advantageous for cultivation. Meanwhile, north-western Latasolic soil associated small water courses and inter-monsoonal scrub forest make an environment suitable for hunting. Monsoonal rain forests were not suitable their cultivation due to thick underneath growth which needs metals for soil manipulation led to curtail expansion of the Megalithic sites (Ragupathy 1987: 181; Seneviratne 1984: 240).

While those factors mentioned above control the coastal area settlements some other factors are operated for establishment of Megalithic sites in inner areas of the country (Rambukwella 1986, 1998/99: 207-215, 2008: 123-144; Seneviratne 1996: 184-197; Seneviratne and Rambukwella 1987). Population growth which appeal for alternative settlements, advancement of technology and due to various trends in the latter part of the Protohistoric period and early part of the Early historic period influence the migration towards the lower hills and upper plains. Location of sites such as

Ibbankattuwa, Asmadala-Galathara, Pinwewa (Galsohon-kanaththa), and Padiyagampola can be taken as the result of such migrations. Modern studies revealed that the archaeological sites located in south-western and lower hills are associated with various resources and the knowledge of Megalithic people of iron ore, copper, gold and silver and other natural resources.

Iron is always found among the materials in Megalithic burials in Sri Lanka. Those iron implements are lower in quality and technology than in Indian context. However, Anuradhapura iron implements are varying in type (Deraniyagala 1972: 152) and 4b layer implements are high in technology than 4a. Similar implements have been discovered from Prehistoric layers of Thissamaharama in southern province in Sri Lanka. Notable iron implements were found at Pomparippu burials and, moreover, tools such as arrowhead, plough and a pin from Divul-wewa burials. Generally, iron implements found in every early stage Megalithic sites are a form mainly suitable for fighting and hunting. Tridents and household equipment have also been discovered in a limited number (Seneviratne 1984: 273-275).

It seems that people found the raw materials from their own environment as evident by the presence of iron compounds such as Limonite and Hematite from the surface soil of north-western, north-central areas, lower hill country and Jaffna peninsula and discovering tools and iron slag with same composition from the burials and settlements (Karunatilake 1994: 104-118; Ragupathy 1987; Seneviratne and Kumarapeli 1995: 1-33; Seneviratne and Maliyasene 1987; Seneviratne 1987: 121-132). The nature of their consumption of iron could be identified by localization of Megalithic and early Buddhist sites near the areas with iron ore and iron slag and Brahmi inscriptions, mentioning about people engaged in the iron industry

(Seneviratne 1987: 129-177). Meanwhile, there are evidence of using steel since Protohistoric period attested by engraving inscriptions and drip- ledges in hard granite around 3<sup>rd</sup> century BC. Firm evidence for usage of iron in Early historic period in Thissamaharama and usage of peninsular Indian process "Urukku" in the pre-industrial period of Sri Lanka can be taken as a continuous tradition of technology.

Copper and bronze also have been discovered from the Megalithic sites in Sri Lanka. Copper spikes and bangles from Pinwewa burials, copper beads, bangles, bars, sticks, copper spikes and a bell and two pieces of cloth stick to copper spikes in Urn burials in Pomparippu and copper jewelleryes from several burials at Jaffna peninsula have been reported (Begley 1981: 78-82; Ragupathy 1987; Seneviratne 1984: 275). Meanwhile, bronze spikes and bangles, bronze spikes with mica chips from Pomparippu and bronze equipment from Gurugalhinna burial and a bronze ring from Anneikotte burial have also been found. Copper slag and terracotta crucible discovered from 3a and 4a layers of Anuradhapura excavation revealed that raw materials for copper production have also been obtained locally (Deraniyagala 1972: 145, 150-151). Terracotta crucible is presumed to be used to melt copper in 6/5 centuries BC. Finding of more copper implements than iron implements in the early periods and usage of copper deposits with specialized skills by the Prehistoric age reveals the importance of their consumption. Usage of copper in historic period is also disclosed from Mantai (Prickett 1987). Further facts on this regard are disclosed by early Brahmi inscriptions and literature sources.

Making of beads is a notable feature of Megalithic culture and various types of beads have been found from almost all Megalithic sites in Sri Lanka (Seneviratne 1984: 276-278). When referring stratifications of Anuradhapura

excavation, only a limited amount of beads belong to period are seen while there is extensive distribution towards Early historic period (Deraniyagala 1972: 134). Various types of beads have been reported from Pomparippu (Begley 1981: 83) and Kantharodei (Ragupathy 1987: 57-62). Availability of imported types, like Carnelian is also notable as reported from Ibbankattuwa burial at lower montaine region (Karunaratne 1994: 108). Beads made with semi-precious stones are rare at the early stages. This could be due to difficulty of reaching lower mountain area where semi - precious stones were found by people. But the extensive use by Early historic period is evident at 4<sup>th</sup> layer of Anuradhapura excavation and Prehistoric archaeological sites. The beads seen in Early Iron Age of Sri Lanka have been made with materials such as glass, clay, minerals, rocks, semi - precious stones and bones, and it explicate the socio-economic basis of contemporary people.

Mica is also associated with Megalithic burials. It is very significant that the deposits of mica in Megalithic burials in Sri Lanka and in the peninsular India show a similar pattern (Seneviratne 1984: 278-279). Mica fixed to copper spikes has been found in Urn burials in Pomparippu. Discovery of mica at Cists burials at Pinwewa and mica plated utensils from pre-Arretine layer at Manthai shows their usage. Modern studies indicate that mica found at Pinwewa and Pomparippu have been originated from a place near Kurunegala. Thammannagodalla burial is located near a mica abundant area, Kabithigollawa. The jewellers mentioned in Demada-oya inscriptions were probably be a group of people came to obtain mica (Seneviratne 1988: 121-132).

It seems that pearl and conch shells have commonly been used in early Iron Age of Sri Lanka especially according to the evidence received from the

north-western and northern coastal areas (Begley 1967: 21-29, Deraniyagala 1972a: 3; Seneviratne 1984: 278). Places such as Kantharodei, Annaikotte, and Kareinagar of Jaffna Peninsula and Kollankanaththa burial in north-western areas are notable here. Conch shells with fine cut marks made with a sharp instrument found at Kollankanaththa burial together with BRW may be due to shell related industry. Findings of conch and pearl at the estuary of Modaragama and Pukulam archaeological sites in north-western area mixed with BRW give evidence for the usage of conch and pearl, their skilful industry and long distance trade by the Protohistoric period.

Discovering stone tools at several Megalithic sites of Sri Lanka is an important because stone tools are not a feature in the Early Iron Age Megalithic culture. Suppression of stone tools were rapid with the use of iron in Protohistoric period and therefore the evidence for transition is very limited (Deraniyagala 1992: 709). However, chert chips, chert blades, micro-lithics stone tools, quartz chips and other stone chips are found with the iron tools at Pomparippu burial (Begley 1981: 83-84). Stone tools have also been reported at the Protohistoric layers at Kantharodei (Ragupathy 1987: 57-62), and Ibbankattuwa burials (Karunaratne 1994: 105-109). Even though Mesolithic and Megalithic layers of citadel excavation at Anuradhapura revealed two techno-cultural stages, it is not disproved the connection between the two layers (Deraniyagala 1992: 694, 709). Earlier pressure flaking technology used to make stone tools have been used to make beads in the latter periods revealed the continuity of the tradition and finding of iron implements and stone tools together in the burials may be the evidence for interconnection between those people.

Information on subsistence pattern has been revealed by the Megalithic burials. Paddy has been found with animal remnants in Pomparippu cist



burials. Bones of mice, squirrel, monkey, bird species together with micro-lithic tools give clue for hunting economy. Although a new technology was introduced by a new culture, Pomparippu burial remnants also were belong to an undeveloped economical status. They have used optimum resources provided by their own environment. As the physical environment of Pomparippu area is suitable form for self-growth of various crops, there may be only limited paddy cultivation. Moreover, the scrub forest in the vicinity could have provided a background suitable for hunting (Deraniyagala 1992: 376-377; (Seneviratne 1984: 287).

The Megalithic sites in Jaffna peninsula also depict that the resources in the vicinity are used for subsistence (Ragupathy 1987: 171-174). Finding of shark bones, fish bones, hen and rooster bones, turtle shells, conch shells and sea shells in large amounts from archaeological sites such as Kareinagar revealed an economy highly connected with maritime resources. Discovering multitude of cattle bones from Anneikottei burial is a hint of hunting and livestock farming. In addition to those bones remnants of various wild animals, goat and sheep have also been found from the burials of Jaffna peninsula (Ragupathy 1987: 164-165).

### **Review**

When consider various types of Megalithic burial in Sri Lanka, the driving factors for their formation and distribution could be ascertained. The physical nature of burial expansion is always connected with the raw materials suitable to create them. Meanwhile, various types of burials in the same vicinity imply that sub cultures of Megalithic culture have created them by using the techniques unique for themselves.

Traditions and rituals connected with Megalithic culture are also represented through these burial systems. Depositing a full skeleton or bones together with various other consumed materials in cist burial or tombs is notable here. In most instances the body is burnt before buried for some time then exposed and bones have been separated before depositing. Un-calcified bones also have been found from some burials. Deposition of remaining of skulls and skeleton in large cist burials in Pomparippu burial is significant (Begley 1981: 69-75) because human skulls have always been deposited in a flat Black and Red utensils. Burnt Children's graves, deposition of adult and children together and compressed deposition of more than one body in the same cist found from Pomparippu are significant. Keeping food, especially grains, metallic or non-metallic equipment and other materials for the dead in small pots inside or outside the tomb is a common feature of all most all burials.

It is still not confirmed whether the ashes found in the burial pots from Kokabey and Gurugalhinna are grave remains or some other. It is believed, as in peninsular India Sri Lankan burial practices also depict concept of worshipping dead people, a life after death and becoming sacred after death. Moreover, some burial practices may have connected with formation of semi - tribal societies with blood relationship feeling of leadership.

Various kinds of material remains are found near Megalithic monuments in peninsular India and Sri Lanka as well. However, in Sri Lanka limited excavations limit conclusions and decisions. Although all Megalithic material remnants in Sri Lanka have similarities to that of Indian composition, they are less in quantity and quality. Pottery is the most common element of Megalithic culture of Early Iron Age and there are several varieties; Black and Red Ware (BRW), Black Ware (BW) and Red

Ware (RW) are unique. However, they are technically less developed than Indian counterparts (Begley 1981: 84-93). Mostly they have been made by using potter's wheel and few of them were handmade. Even though they were very simple, rough and asymmetrical in the early stages, improvement could be seen towards Early historic period. It is evident that the BRW with medium composition were abundant and unique feature from all Megalithic sites and their advancement into delicate BRW indicates awakening towards the Early historic (Seneviratne 1984: 268-269).

Post burning graffiti symbols on pottery is a significant feature in this industry where BRW was frequently used as evident from Anuradhapura, Pomparippu and northern Megalithic sites (Begley 1981: 84-94; Deraniyagala 1972: 65-130; Ragupathy 1987: 171). About 100 of very similar symbols to that of Megalithic composition of peninsular India have been discovered from Sri Lanka. Finding of these abundant pottery symbols in less quantities in Megalithic burials and Early Brahmi inscriptions (Paranavitana 1970: xxvi) show their importance.

Orientation of civilization in Sri Lanka is considered as a transition from middle stage of the Stone Age into Iron Age. This was evident by the introduction of paddy cultivation together with the iron technology by Megalithic people for the first time (Seneviratne 1984) as revealed by the discoveries of the Anuradhapura citadel excavation (Deraniyagala 1972, 1992). New technology and new crops have been introduced in the Protohistoric period. The gradual control of environment with the help of iron technology, limited wet cultivation, Chena cultivation, animal husbandry and hunting were carried out instead of total hunting and food collection economy prevailed in Mesolithic age. However, the quality of subsistence pattern has not been changed and the multi-resource broad

spectrum economic system prevailed in Mesolithic period was existed during the Protohistoric period also without much change.

Bones of hunted animals and paddy husks have been found in large quantities from the Megalithic layer of Anuradhapura which discloses rural settlement and multi-resource consumption. This situation is something occurred at least after 7/6 century BC. Proofs on paddy have not ever been found from any stage before the Megalithic layer in Anuradhapura excavation (Deraniyagala 1972: 155). Cut marks in animal bones found mixed with ashes and charcoal is presumed to be a slight burning, boiling or cooking in a mixture of oil before eating them. Remnants of bones discovered are belonged to cattle, deer, swine, and horse or bird species.

Information from Megalithic sites of lower mountain region of Sri Lanka also shows very similar economical background. Many animal bones have been discovered from the Ibbankattuwa Megalithic burial excavations (Karunaratne 1994: 105-109). Remnants of cattle and other wild animals are found together with micro-lithic tools. It is important to note that chronologically this site is more similar to sites with primal Megalithic subsistence patterns. This raises a question whether they have adopted semi-nomadic life style even by 6/4 century BC.

Several Megalithic sites of north-western and northern areas of Sri Lanka seem to be established on the basis of favourable soil (Seneviratne 1987: 135). This led them to reach the Latasolic soil located beyond the alluvial soil. Tools with limited technology in the early stage of Early Iron Age were not sufficient to form a micro environmental effectively. However it has been pointed out that it could be suitable for multi resource broad spectrum economy. However, in the latter parts of Protohistoric period gradual development of technology makes a prominent development of subsistence

patterns. This could be elaborated by migration of people to much usable environmental zones together with proper practice of irrigation technology, paddy cultivation and other industries.

The question of people with special cultural activities and use of special burial practices in the Protohistoric Iron Age in Sri Lanka are not yet resolved. Several biological factors have been identified by a comparative study on remnants of human bones found in burials (Deraniyagala and Kennedy 1972: 18-48; Lukacs and Kennedy 1981: 97-130). Accordingly, it is revealed that human skeletons found from Pomparippu show a similarity to the Mesolithic man lived in the later Stone Age at Bellan Bandi Palassa and human teeth found from Pomparippu are matching with the teeth of indigenous Vedda people to a great extent. Thus, as the characteristics of a combination can be seen biologically (and physically), it is presumed that the people of early Iron Age have been lived with a coordination between other communities to a great extent (Deraniyagala and Kennedy 1972: 18-40; Lukacs and Kennedy 1981: 97-132; Kennedy 1993: 329-341 ).

Thus, it is presumed that internal diffusions of people or cultures are primarily based on the need of obtaining resources prevailed there. Brahmi inscriptions, literature sources and archaeological data provide information of this process. Significance of originating first Buddhist sites near to Megalithic sites is considered to be a cultural combination occurred in one occasion of this process and depiction of gradual transition from one stage to another. Thus the expansion of Megalithic sites in Sri Lanka has taken place in various times through various environment systems based on various utilities that wanted for those societies as the settlements, their subsistence and technological development during the early periods.

When we consider these factors it could be concluded that the Early Iron Age of Sri Lanka was evolve in basis of that in the peninsular India and it is the most significant techno-cultural stage after the Mesolithic period in Sri Lanka. But it should be noted that even though the features of Mesolithic culture prevalent during Protohistoric iron used period of peninsular India concurrently prevailed in Sri Lanka with similar pattern and expansion, there is no conclusion about its origin or basic trends.

If the idea on a Neolithic or copper used period after the Mesolithic period of Sri Lanka is proved by future research, it will directly influence the notion for the formation of Iron Age of Sri Lanka. Accordingly, there can be a confirmation or even discarding of the above mentioned trends with introduction of new trends during the Protohistoric period of Sri Lanka.

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