

THE DAWN OF CIVILIZATION IN SRI LANKA — A STUDY

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If culture could be defined as a whole social heritage, every thing in the life of man that is not part of his biological equipment, civilization may be understood as a refined form of culture. However, Archaeologists use the word civilization primarily to define a stage in the material and cultural development of man passing through the phases of food collection, food production and eventually culminating in a city life, associated with town planning, metallurgy, arts and crafts, trade and commerce, coinage, literature and the art of writing.¹ These phases are also termed in the archaeological literature as Pre-history, Proto-history and history. Pre-history is again the Pre-literate phase of the human society and includes various phases of Stone Age such as Palaeolithic, Mesolithic or Microlithic and Neolithic. These divisions are based on the technique of tool making and the associated economic and social status of the society. History begins with the art of writing and Proto-history is the forerunner of history.

In Sri Lanka although a considerable amount of research has been done on Pre-history the approach towards the past has been largely centred around the Historical Archaeology. Hence the evidence available for Proto-history is qualitatively and quantitatively limited, in contradistinction to the Pre-historic or historic phases of the Island.² Because of the predominant influence exerted by Buddhism, scholarly research on Sri Lanka has long been concentrated around the study and interpretation of Buddhist literature and language and frequently other evidence, including inscriptional and archaeological, was either approached from the bias of literary accounts or ignored altogether. As a result of this kind of approach, the historians of Sri Lanka have almost exclusively reconstructed its early history on the basis of the Pali chronicles such as the Dipavamsa and the Mahavamsa. These chronicles, however useful they may be, tend to be legendary as they go back to the time of antiquity.

The account of the beginnings of civilization in our country is found in the form of myths and legends in the above Pali chronicles. Many historians who have analysed these legends, while admitting the legendary nature of these yet saw a kernel of truth in them regarding the beginning of civilisation in this country.³ On the basis of possible identification of place names given in the legends and the comparative linguistic studies of the Sinhala language and other

cultural similarities with North India they arrived at the conclusion that the early settlers came from North India and hence described them as Indo-Aryans, although the very term Aryan has not been found in these chronicles. Accordingly, several streams of migrations initially starting from the northwest and later from the northeast of India by the fifth century B. C, reaching the river valleys of the Dry Zone of Sri Lanka northwest, east and south-eastern parts of the Island have been postulated.⁴ The credit for establishing the settled life, with irrigated agricultural economy and iron technology has been given to Vijaya whose descendants came to be called as Sihala/Simhala.⁵ It has been further made out that at the time of the Aryan migration, the land was virtually empty except for the non-human Yakkhas and the Nagas, the original inhabitants of the island. This model of Sinhalisation often assumes a complete or partial genocide by the immigrants of the existing population and the demographic replacement by the new arrivals. Kuveni, the Yakkha princess who helped Vijaya to overcome the Yakkhas later became his bride and bore him two children. Kuveni and her children were later discarded in favour of the Pandyan Princess. Descendants of Kuveni's children were known as Pulindas.

The Pandyan Princess who bore no children to Vijaya, came with seven hundred maids as brides to Vijaya's companions along with eighteen guilds. Subsequently, the village settlements established by Vijaya and his companions paved the way for the emergence of civilization with Anuradhapura as the capital during the time of Devanampiya Tissa (B. C. 250-210), the first king of the Historical period, and in whose reign Buddhism is said to have been officially introduced into the Island. Thus, it has been claimed that by 250 B. C., there is evidence of a recognised literate culture in the main areas of settlement—a contribution, no doubt of the early Aryan settlers even though the outlying communities may have remained pre-literate.⁶

Although the above model for the beginning of our civilization has been the norm of many historical works, serious reservations have been expressed regarding it, as this has not been corroborated by any other sources. G. C. Mendis, a pioneer historian of Sri Lanka merely dismissed the story given in these chronicles as legends and of no value for history at all.⁷ But S. P. F. Senaratne,⁸ went a step further and observed that "it is extremely surprising that such an account of the period before Devanampiya Tissa should pass off as history. What are the sources on which it is based and how have they been validated? In point of fact there does not seem to be any evidence either historical or archaeological which can substantiate this story." He further observed that "we do not know how metal was introduced into the country—whether it was the result of sporadic visits, trade, migration or invasion. The introduction of the use of metal may even have produced immediate change in the technological and therefore in the social structure of the Neolithic communities, that existed at that time..... even the outline of this process is far from

distinct. Perhaps the changes were not Islandwide." Finally he ended up by saying that 'in the phase of marked Archaeological neglect, legend has filled the breach and such views as are held about this period derive mainly from the traditions'.

Inadequacy of research on the emergence of civilization has been further highlighted by Senaka Bandaranayake as well.⁹ For, he observed that 'little or no research has been done on how this great historic leap in our national development took place, but many unfounded speculations have been made on the origins of our society and culture..... The beginnings of settled civilization in Sri Lanka have not yet been identified as yet but present indications point to a period somewhere in the first millennium B. C., let us say about 500 or 1000 years before Devanampiya Tissa. Then, he continued that 'our present ideas are based solely on literary traditions and the linguistic evidence of the Proto-Sinhala language contained in the Brahmi inscriptions. All other forms of evidence currently utilised are of dubious value.'¹⁰ Similarly K. M. De Silva¹¹ observed that 'while Archaeological evidence on the Pre-history of Sri Lanka is still too rudimentary for us to attempt even the bare outlines of the beginnings of human society in the Island, the data relating to India — which affords a convenient though not entirely reliable point of comparison—suggests that the first appearance of homo sapiens in the Island could have occurred about 500,000 years ago. We know very little too about subsequent cultures during Palaeolithic times, though a few objects possibly datable to this era have been found'.

Nevertheless, the researches conducted during the last half of the present century have given us sufficient data regarding the Pre-historic society that existed in our Island. This is mainly due to the painstaking researches of P. E. P. Deraniyagala¹² and Siran Deraniyagala.¹³ P. E. P. Deraniyagala with the available research potential at that time identified the presence of hunting and gathering society based on the Palaeolithic stone tool tradition. Evidence of this nature has been found by him in the river beds of the Ratnapura areas in the south western wet zone. These stone tools were found by him in the quaternary deposits of this region running to 30 metres consisting of basal gravel overlaid by clay, silt and sand. Hence he named this culture as Ratnapura culture. The stone tools of this culture were mainly choppers made of quartz and chert and he compared these with the similar tools found in the Soan valley in north western India and dated them to the geological time scale of Middle Pleistocene, about 500,000 — 700,000 years ago, on the basis of the faunal remains found in these beds. The associated fauna identified by him included the extinct forms of elephants, rhinoceroses, hippopotamus and *Bos indicus*. It is also noteworthy that he has even identified the remains of hominoids, such as an incisor tooth and a pre-molar tooth of a hominoid in separate localities.

However, it may be stated that serious doubts have been raised with regard to the primary contexts of the stone tools and the fauna as some of the beds have undergone re-disposition.¹⁴

However, the recent study of Siran Deraniyagala of another quaternary coastal formation of the island of the north west and the south east, which he has termed as Iranamadu Formation has shown evidence for human settlements going back at least to the last interglacial times-some 125,000 years ago. This Iranamadu formation has two layers, namely the basal gravel and the upper clayey sandy layer, symbol of ancient coastal sand dunes. Siran Deraniyagala however opines that the lithic assemblages characterised by small flakes and discoidal cores (less than 4.5 cm) with a few larger elements found in this basal gravel show evidence of Middle Palaeolithic phase in Sri Lanka, thereby bearing traces of human settlement in Sri Lanka from at least as the last interglacial with the possibility of the existence of the lower Palaeolithic phase.¹⁵

Nevertheless, it may be stated that to date no stone tools of lower Palaeolithic with a typical Acheulian hand axe tradition have been found in Sri Lanka as in India. Many reasons have been attributed for its absence. The most notable are the absence of quartzite the raw material for making this tool and the heavy rain forested region of Sri Lanka which did not favour penetration of this tool tradition into the Island. At present there is also no evidence for the presence of Upper Palaeolithic phase, characterised by tools made of blades, which in India go back to —40,000 years ago. However, it may be recounted that the Pre-historic phase of the far south of Tamil nadu where too there is no evidence either for an Acheulian tool tradition or the Upper Palaeolithic phase offers a close parallel to that of Sri Lanka.

When we come to the next phase of the food gathering namely, Microlithic or mesolithic phase, we have considerable data regarding the tool technology, material culture, distribution, authors and the date. P. E. P. Deraniyagala who saw a clear distinction between the earlier Ratnapura culture and this culture on the basis of the stone tool technology and faunal remains, named it after its type site, as Balangoda culture. In naming this Balangoda culture he attributed both Mesolithic and Neolithic elements to it. However, the subsequent researches have shown that there is no evidence for the Neolithic phase in Sri Lanka characterised by settled life, polished stone axes, food production and domestication of animals. A similar situation seemed to have prevailed in the Far South of Tamil Nadu as well. Instead, in the Far South of Tamil Nadu and Sri Lanka, the Mesolithic phase seems to have been succeeded by Proto-historic Iron Age, instead of Neolithic Age. In fact, Paddy cultivation with irrigation, iron technology, and animal domestication is associated with it in both regions.

With regard to the chief characteristic of the Mesolithic phase it may be stated that this culture of Sri Lanka is characterised by the predominance of microliths, mainly of quartz and to a lesser degree chert, with a greater frequency of bladelets, geometric and non-geometric forms, bone points and bone artifacts, scrapers, choppers, hammer stones, grinders, grind stones, pestles, and mortars.¹⁶

There is also evidence for the use of barrel beads and disc beads in shells of tree snail. The Sri Lankan Mesolithic tools offer a close similarity to that of the Peninsular Indian counterparts, more particularly to the similar assemblages from Tamil Nadu and Kerala.¹⁷ In fact the Sri Lankan assemblages have very close parallels with the Tinnevely and Kerala industries of South India. Kerala assemblages are in quartz, while chert and quartz have been used in equal proportion at Tinnevely. In Sri Lanka, 90% of the assemblages are on quartz, followed by chert. However, Kerala does not represent any geometric forms, unlike the Sri Lankan and Tinnevely industries.

The assemblages in these regions show certain common characteristics in their typology, technology and morphological aspects. Among the shaped tools, scrapers are the most common type. The percentage of blades is less. Although less in number, pebble choppers are found among the Mesolithic assemblages. Of special interest is the occurrence of bifacial points in both the industries of Tinnevely and Sri Lanka. Bridget Allchin¹⁸ while commenting on the bifacial points from Sri Lanka and noting a parallel in the sampung bone industry in Indonesia favoured its close connection with South India rather than with South East Asia. As a whole it may be asserted that there is no positive evidence for the influence of South East Asian stone industries in Sri Lanka during the Pre-historic phase. At this point, it is relevant to quote Solheim, a specialist on South East Asian Pre-history. He remarked that 'the Archaeological evidence for the possible presence and influence of South East Asian people in Ceylon during Pre-historic period is negative'.¹⁹ This is confirmed by Siran Deraniyagala, who observed that "Southern India and Sri Lanka constituted a regular melting pot of Stone Age groups, both in terms of their biological traits as well as their cultural concomitants".²⁰

The occurrence of these Stone tools all over Sri Lanka, except in the Jaffna Peninsula, ranging from the mountainous parts, misty Horton plains, grassy patana hills of Bandarawela to the semi-desert regions of Mannar and Puttalam and the lowerlying coastal areas is again noteworthy. This shows that unlike in the earlier phase, area of distribution of the hunting and gathering community was island-wide during this phase. Moreover unlike the earlier phase, Stone tools have been found on surfaces as well as in stratified contexts from the caves to the coastal clayey sand dunes of the Iranamadu formation. The Stone Age people seemed to have lived in hilly regions, rock

shelters, open air sites and sea beaches. Hunting and gathering were the mainstay of their economy. Probably areas close to water supply were preferred. Hunting with bow and arrow although important was augmented by the collection of snails, roots, honey and many different kinds of vegetables, fruits and small game. It is also very likely that the considerable marine resources occurring in the lagoons of the semi-arid zone also would have been exploited by the people living on the coastal sand dunes. Evidence of this nature has come from the recent excavations at Mantai. The remains of various animals have also been unearthed in the lowerland Dry and the Wet zones.

Among the animals, the most important are elephants, gaur, water buffalo, sloth bear, pig, sambhur, spotted deer, hare, squirrel, monkey, jungle fowl, fresh water crabs, and molluscs. Although the study of the plant remains is in progress, there is evidence for the exploitation of wild edible nut known as Kekuna, breadfruit, and the wild banana. The presence of marine molluscan shells, salt, sea shells in the hinterland settlements of the Mesolithic people show evidence of trade or barter. Like the modern Vaddas they wore leaves and barks and decked themselves with ornaments of shell, bone and brightly coloured seeds. At present there is no evidence for the Pre-historic cave paintings as in India, although many have misunderstood the modern cave paintings of the Vaddas as that of the Pre-historic people.

At this juncture it is pertinent to quote Allchins who made a study of both the Indian and Sri Lankan Mesolithic populations, as it is relevant to Sri Lankan contexts as well. For, they observed that 'with the late stone Age (Mesolithic) we find ourselves dealing with a body of material which can be interpreted in cultural terms and considered in apposition to surviving entities of society. Among these people we can assume there to have been an important element of the Proto-Australoid or Vaddoid type which is still predominant among tribal peoples and is represented to a greater or lesser degree at all levels of Indian society. Both biologically and culturally the late Stone Age population, which may have been of no mean proportion must have contributed some of the most deep seated and one might almost say the most Indian elements of the culture of later times. Certain attitudes and assumptions which are now regarded as typically Indian must have their origin in the culture of the people'.²¹

Fortunately for Sri Lanka, unlike in the case of Tamil Nadu and Kerala, skeletal remains of the Mesolithic population have been unearthed from various sites ranging from an open Air habitation site like Bellan Bandi Palassa and the cave sites like Beli Lena and Batadomba Lena and several others. These remains have been interpreted to display a biological continuum from the Pre-historic population to that of the present day tribals - Vaddas.²² Hence it is certain that the non-human beings of the Pali chronicles namely the

Yakkhas and the Nagas are no other than the Pre-historic population of the Island. At this juncture it may be recounted that Paranavitana²³ who relying on the evidence of the Pali chronicles asserted that the original inhabitants of the Island were the non-human Yakkhas and the Nagas, later corrected himself by saying that 'the higher culture including the languages brought to these regions by the Sinhalese as well as the Tamils, was adopted in varying degrees by the people of a Stone Age culture who were there before their arrival. Thus, the vast majority of the people who today speak Sinhalese or Tamil must ultimately be descended from those autochthonous people of whom we know next to nothing. It is very likely that this Mesolithic population is the one referred to in the Pali chronicles as Candalas, Pulindas and the Sabaras. These names in fact denote the tribal population of South Asia who spoke a form of Austro-dialect. These are the very people who have been described by Anthropologists as Proto-Australoids.

As regards the origin of the Mesolithic culture, a quarter of a century ago S. P. F. Senaratne²⁴ suggested a time bracket of 10,000-6500 B. C. The artefact of rock crystal in association with the Balangoda skeletal remains later gave a Thermoluminescence dating of 6500 B. P \pm 700.²⁵ Subsequently, Siran Deraniyagala²⁶ assigned 25,000 years B. P. for the beginning of the Mesolithic phase. However, the recent excavation in the caves of Fa Hien, Kitulgala and Batadomba lena in the lowerland West zone have given the C 14 dates such as 31,000 B. P, 27,000 B. P, respectively for the beginning of this culture.²⁷ As none of the sites so far indicated the transition from Pre-historic to Proto historic Iron Age, in the absence of the Neolithic phase, the demarcation of the upper boundary of the Pre-historic phase only becomes possible by dating the lower boundary of Proto-history. This has been effected by the evidence from the habitational site of Anuradhapura which indicates that by 2800 B. P. the Proto-historic Iron Age had superseded the Stone Age at least at Anuradhapura, with no vestiges of stone tools occurring in the Iron Age contexts.²⁸ So far no conclusive evidence has been forthcoming for plant or animal domestication during the Pre-historic time. In the absence of an intervening Neolithic or chalcolithic phases there seems to have been an abrupt transition from a Prehistoric hunting and gathering subsistence economy to a full fledged Iron Age economy with irrigated agriculture during the Proto-historic phase.

The above survey indicates that technologically, culturally, linguistically and biologically the Pre-historic population of Sri Lanka were an extension of the Indian Pre-historic population and were more closely allied to the Southern part of India. Probably this prompted Kennedy²⁹ to remark that 'the Island maintained close cultural affinities with the late Stone Age (Mesolithic) culture of the mainland, a situation that appears to have persisted into the Iron Age'.

The duration of the Proto-historic phase differs from Country to Country. In Sri Lanka the beginning of the Proto-historic phase may be assigned to 900 B. C. as indicated by the C14 dating³⁰. However, there is a problem with regard to the dawn of the Historic phase, although it has been customary to reckon the dawn of this phase with the accession of the King Devanampiya Tissa in whose reign the evidence for the first appearance of writing in the form of Brahmi inscriptions has been found. Nevertheless, Siran Deraniyagala on the basis of some pottery forms as well as the Brahmi characters on the potsherds found in the Iron Age layer dated by the C14 method of dating, argues for an earlier beginning of the historical phase which he termed as basal early historic with the time bracket of 600 — 500 B. C. followed by a lower early historic which had a duration of 500 — 250 B. C. His plea for an earlier date is also supported by the evidence from Tamil Nadu where potsherds with Brahmi characters have been encountered in the Iron Age layers at Arikamedu and Kodumanal.³¹ Although no potsherds with Brahmi characters have been encountered in the layer of lower early historic (500 — 250 B.C.), he however feels that the Bronze seal from Anaikodai with pictorial and Brahmi writing may be assignable to this phase.

An early date for the beginning of the early historic phase as argued for by Siran Deraniyagala seems to be in agreement with the Subcontinental situation as well. For, in the 6th century B. C. there is evidence for Urbanisation in the Gangetic Valley. The legends of three Tamil Academies of Tamil Nadu as well as the evidence from the excavations suggest a similar situation in the Far south of the subcontinent. Moreover, there is some indication for the presence of writing around this time in Tamil Nadu. For, Buhler on the evidence of some Brahmi characters found in South India, especially Tamil Nadu, concluded that there were two forms of Brahmi writings in vogue around the 6th century BC concurrently in both the North as well as the South of the Subcontinent. He named the southern variety as Dravidi.³² It seems that the discovery of the Potsherds with Brahmi characters both in Tamil Nadu and Sri Lanka further confirms the view of Buhler, and indicates the prevalence of Brahmi writing independent of North India, in both Sri Lanka and Tamil Nadu. So do the early coins of Tamil Nadu and Sri Lanka, namely the Punch-marked coins. Mahalingam³³ drawing parallels between the graffiti symbols on the Iron Age pottery and the Punch-marked coins, however feels that these coins are datable to 500 BC and are the products of the region instead of being the imports from North India as often claimed. It is very likely that the use of burnt bricks also came into vogue during these times in both the regions. Hence on the evidence of the art of writing, the duration of the Proto-historic phase may be assigned to a time bracket of 900 — 600 BC.

A quarter of a century ago, in order to test the validity of the accounts given in the Pali chronicles regarding the early Aryan settlements, S. P. F. Senaratne³⁴ surveyed the regions mentioned in the chronicles and concluded that

'in particular we have no archaeological finds that could be traced back to either the West or East coast of Northern India.' What has been said about a quarter of a century ago is valid even today. The researches conducted during the last quarter of the present century have given sufficient data to delineate the historical process during the Proto-historic phase. The available archaeological data from the regions mentioned in the Pali chronicles as the areas of early settlements has shown that South India and Sri Lanka were in the same cultural zone known as Iron Age culture which had its beginning in South India around 1000 BC.

This culture had four components, namely tank, rice fields, habitations and the burials. There is a correlation between the burials and the habitations which consist of both iron and Black and Redware pottery. However it may be stated here that there are many variant types of burials and these although they begin to occur in both South India and Sri Lanka at the dawn of Proto-history, continue to survive around the beginning of the Christian era as well. Moreover, these burials are often labelled in the Archaeological literature as Megalithic burials on account of the big stones being used for the construction of burial tombs, although burials without any stone appendages are also part of this culture. As aptly stated by Kennedy³⁵, it seems reasonable to conclude that the inhabitants of Peninsular India and Sri Lanka were within the traditional framework of Iron Age cultural complex in which the erection of Megalithic structures was a common practice.

As mentioned earlier, the correlation between the habitations and the burial sites indicates the homogeneity of this cultural complex. Of the habitation sites, Anuradhapura figures prominently on account of its size in comparison with other sites as well as the amount of research done on the site. At the beginning of the Proto-historic phase it embraced an area of 10 hectares in contrast to the other sites of the Proto-historic phase which are only 3 hectares. This site also seems to be the earliest of the Proto-historic sites, followed by Kantarodai, Mantai and Tissamaharama.³⁶ The excavations at Anuradhapura yielded deposits of three cultural phases.³⁷ They are Mesolithic, Iron Age and Early historic. The evidence from the excavations suggests an occupation of this site initially by the Mesolithic people followed by the Iron Age people. However, the artefactual assemblages show evidence of cultural continuity from the Iron Age to Early historic. In the absence of any evidence for the occupation of Kantarodai by the Stone Age people, it has shown evidence of two cultural phases namely Iron Age and Early historic.³⁸ Mantai excavations have yielded evidence for its occupation by the Mesolithic and the Iron Age people.³⁹ It is possible that Tissamaharama may also yield a similar sequence if excavated, although evidence for the beginning of the settlement at this site dating back to the Iron Age, had been highlighted by Parker⁴⁰ in the last quarter of the 19th century.

The burial forms could be classified as urns, urns in cists, pit-burials, extended burials in pits, cairns, stone cists burials and the dolmens.⁴¹ The evidence of urn burials have come from Pomparippu, Tekkam, Karambankulam and Kataragama. The excavations conducted at Pomparippu during the last three decades have given valuable data regarding the cultural potentiality of the site. It offers many parallels to the similar sites at Adichchanallur in Tamil Nadu and the C14 dating for Korkai lying on the Tamraparni river bed as that of Adichchanallur suggests the origin of the burial site itself may go back to the very beginning of the Proto-historic phase in the Island.⁴² It is very likely that the extended burials encountered at Anaikodai, Karainagar⁴³ and Mantai⁴⁴ too owe their origin to the burials found in the similar environmental matrix of the districts of Madurai, Ramanathapuram and Tinnevely. So were the cairn burials of Pomparippu and Mahewita. The cists from Mamaduwa, Aluthbomбуwa, Tammennagodella, Gurugalhinna, Vadiga Wewa, Kokabe, Diwul Wewa, Ramba Wewa, Machchagama, Katiraveli, Ibbankattuwa, Galatara and Pin Wewa which on average range from one metre to two metres in size have their parallels in Karnataka, Tamil Nadu and Kerala.⁴⁵ The above regions also offer parallels to stone circles from Mamaduwa and dolmens from Katiraveli and Padigampola. Finally it may be stated that the presence of Black and Redware in the Kelani valley⁴⁶ as well as in the South Eastern region of Sri Lanka may be taken as an evidence for the presence of Iron Age people in these regions. Intensive archaeological survey and excavations may yield more information regarding the activities of this people. Probably the above parallels have prompted Paranavitana⁴⁷ to assert that the Megalithic monuments of Sri Lanka are obviously an overflow from South India.

The pottery forms ranging from the burials urns to the utensils of daily use such as bowls and the dishes and the graffiti marks offer many parallels to their counterparts in South India. While referring to the Black and Redware at Kantarodai, Vimala Begley⁴⁸ observed that "certain ceramic types especially the Black and Red ware parallel those of the Iron Age of South India and possibilities are great that settlers in both areas were of common origin or at least in close contact." Similarly the pottery forms from Anuradhapura and Pomparippu indicate that they are part and parcel of the South Indian Iron Age cultural complex.⁴⁹ What is said of pottery is equally applicable to the iron tools, copper and bronze items and the beads.⁵⁰ While referring to the iron tools encountered during the Anuradhapura excavations such as knives, arrowheads, blades, points, adzes, rings, chisels etc., Deraniyagala⁵¹ observed that 'in technological and typological terms the assemblages at Gedige from 3A to 4B (Protohistoric to the early historic phase) is related to the Megalithic assemblage of Peninsular India. Similar observations could be made for copper tools such as rods, pins, rings, bangles with budshaped ends, copper beads and bronze necklaces. Beads from the Iron age sites also confirm the above pattern.

It may be stated that the tank and the rice fields formed the backbone of the Iron Age economy. This is confirmed by the presence of the habitational and the burial sites in close proximity to the tanks and the fields. There is also evidence for the existence of rice cultivation from Anuradhapura, Pomparippu and Kantarodai.⁵² Plough shares have been unearthed from Pomparippu, Pinwewa and Diwulwewa.⁵³ The animal bones, especially of cattle and horses, have been discovered from the habitational sites. It is also very likely that some animals were butchered for food along with the birds. Marine resources also seemed to have been exploited by this people. Although agriculture cum cattle breeding would have been the main occupation of this people, hunting would be reduced to a secondary status.

Referring to the economy and technology of the Iron Age people of Sri Lanka, Susantha Goonetillake⁵⁴ observed that 'The Megalithic evidence points to an important fact that the economy and technology of Sri Lanka in the early phase was not different from the South Indian one. This fact is also collaborated by present evidence of kinship system which is largely of the South Indian type. The kinship system it should be noted has an intimate association with the production system and so is conditioned by it.' He finally concluded by saying that 'the existence of a South Indian economy and technological pattern immediately raises the major paradox of early Sri Lankan history namely the presence of an economy and technology common to South India but a language and religion of North Indian origin. In Marxist terminology—as it were a South Indian infrastructure with a North Indian Superstructure'. This is also clearly evident from the common base of the Sinhalese and the Tamil caste structure where the caste is divided into agriculturalists and the non-agriculturalists. As common in an agriculture based society, here too the agriculturalists are not only numerous but also powerful among both the Sinhalese and the Tamil communities. This phenomenon has been noted by sociologists as well. For, Bryce Ryan,⁵⁵ while referring to the Sinhalese caste structure remarked that recognition of the South Indian structure makes less surprising the fact that among Sinhalese the highest caste is also the largest.

The anthropological study of the physical remains of the Iron Age population of Sri Lanka showed that the authors of this culture were in no way different from those of their counterparts in South India.⁵⁶ The skeletal remains from Pomparippu, Mantai, and other evidences from Anaikodai confirm their genetic relationship with those of South India. This is further confirmed by Kirk⁵⁷ who conducted a comparative study of the blood groups of the Sinhalese with those of the populations of the north western and eastern India from where the progenitors of the Sinhalese are supposed to have come. This again is reinforced by the study of Wijesundara.⁵⁸ His analysis of the blood groups of the Sinhalese as well as the Tamils showed no remarkable difference between the two.

In the light of what has been said so far, it is no longer possible to maintain that either the Mesolithic people, namely the Proto-Australoids borrowed and developed the main elements of the Iron Age culture or that the incoming Aryans while adopting the artefact assemblage of the Iron Age people did not absorb the burial practices to any significant extent. Even cultural attainments of the Mesolithic population indicate that they were not matured enough to borrow the main elements of the Iron Age culture and develop it on their own. There is no indication even from the excavated sites for a contention of this nature. It is possible that the Mesolithic people continued to live side by side with the Iron Age people and established contact with them as in India. While the Iron Age culture thrived in the main centres of the Island, this pre-literate folk would have continued to exist with their traditional hunting and gathering economy. Moreover the correlation between the settlements and the burial sites of the Iron Age culture in Sri Lanka as in India coupled with the cultural continuum from the Iron Age to the basal early historic phase and the absence of any tangible evidence for the early Aryan settlements associated with the river basins in the North West, East and South East of the Island in the form of pottery such as the Painted Grey ware or the Black Polished ware or any other cultural elements associated with North India do not support the view that the incoming Aryans while adopting the artefact assemblage of the Iron Age people did not absorb the Megalithic burial practices to any significant extent.⁵⁹ On the other hand it was the Iron Age people who were exposed to various cultural influences emanating from different parts of India. The presence of a few sherds of Black Polished ware of the Gangetic origin in the basal early historic layers of Anuradhapura may be accounted for this way. This may even indicate the trading contact with the Gangetic valley where during this period cities have come into existence.

The presence of Brahmi inscriptions in the Dry Zone region, where the early Aryan immigrants are supposed to have established settlements is often quoted as a concrete archaeological data along with the linguistic similarity of the Sinhala language to that of North Indian dialects as an evidence for the early Aryan colonisation of the Island.⁶⁰ The find spots of these inscriptions however lying in close proximity to the tanks and the Megalithic burials in the rich reddish brown earth region is again a pointer to the close link that existed between the authors of the inscriptions and the burials. This link is further reinforced by the similarity between the non-Brahmi symbols found on these inscriptions (which too began to disappear at the beginning of the Christian era, like the Dravidian clan names and the titles), and the graffiti symbols of the Iron Age pottery. The perusal of these inscriptions which speak of the donations of caves by the new converts to Buddhism clearly indicates the presence of two layers of Brahmi script itself, besides the authors of these inscriptions being exposed to various cultural waves, emanating from India.

As mentioned above the script of these inscriptions display two layers. They are Pre — Buddhist and the Buddhist layers.⁶¹ These also have been interpreted differently as Pre-Asokan and Asokan layers since the Brahmi script was introduced into Sri Lanka along with Buddhism during the time of the Mauryan Emperor Asoka in the early 3rd century B. C. Scholars who have worked on the Brahmi script of Sri Lanka have identified certain forms which morphologically differ from those of the Brahmi forms of the Asokan times but gradually these forms were replaced by the Asokan forms by the beginning of the Christian era. These forms such as a, i, ka, and ma have been labelled as Pre-Asokan forms. Thus referring to the Brahmi inscriptions of Tamil Nadu and Sri Lanka, Fernando⁶² observed that the inscriptions of Tamil Nadu, and the Brahmi records of Sri Lanka and the Graffiti marks on the pottery of Arikamedu (although belonging to a later period) represent perhaps the same tradition. Probably these records were carved by scribes of one and the same school and if so, it has to be assumed that a school of scribes, differing in several respects from those who carved the inscriptions of Asoka, was existing in South India and Sri Lanka and was practicing their art in these regions even before the time of Asoka. It is this variety of Brahmi which has been labelled by Buhler as 'Dravidi' and by Nagaswamy as 'Tamili'⁶³

The internal evidence of these inscriptions shows the influence of the Brahmanical religious beliefs as evident from the names of the Gods and Goddesses appearing in these along with the Brahmanical Gotras.⁶⁴ The original linguistic affiliations of the authors also are exemplified by the presence of Dravidian titles and tribal forms which too disappear at the beginning of the Christian era like the Pre-Asokan layer of the Sri Lankan Brahmi⁶⁵. The Brahmanical religious beliefs indicate that there was an Aryan or North Indian cultural penetration into the Island as in the case of South India and South east Asia probably by peaceful contacts through trade and other means. Certainly long distance trade would have been the chief motivating factor in uplifting the Iron Age communities with an agricultural base to the state of civilization as evident from the Sangam literature regarding Tamil Nadu as well as from the accounts of Hsuan Tsang and Fa-Hsien regarding the early colonisation of the Island. While Hsuan Tsang⁶⁶ would attribute credit to the son of a merchant called Simhala for colonising the Island Fa-Hsien⁶⁷ observed that Ceylon had originally no inhabitants but only demons and Dragons dwell in it. Merchants of different countries came here to trade. At the time of traffic the demons did not appear in person, but only exposed their valuable commodities with the prices affixed. Then the merchant men according to the prices marked purchased the goods and took them away. But in consequence of these visits the men of the other countries hearing of the delightful character of the place flocked there in great numbers and so a great kingdom was formed.

A perusal of the inscriptions also clearly demonstrates that like the Pre-Asokan Dravidi form of script gradually being replaced by the North Indian

Asokan form of Brahmi, the many Dravidian forms such as the titles and the clans also seem to have disappeared at the beginning of the Christian era on account of Buddhisisation and the emergence of the state from tribal to territorial. The most important title worn by the upper class or higher officers of the state, who were recruited from the landed proprietors as evident from the large number of donations in contrast to any other groups, is Parumakā.⁶⁸ Though Parānavitana and others would prefer the derivation of the Sinhalese and the Pali forms such as Pomok and Pamukkho from Parumaka, linguistically and phonetically the form is more akin to the Dravidian form Perumakan or Parumakan or Proto-Dravidian Parumaka. (Fig. 1). This derivation is also confirmed by the appearance of the feminine form of this as Parumakal in these inscriptions. The other Dravidian clan names are Vels and Ays which have been wrongly read as Velu, and Aya. These forms in fact remind us about the chiefs such as Velir⁶⁹ and the Ays⁷⁰ who held sway in the far south of the Pandyan country. The form Bata/Barata found in these inscriptions have been given the meaning 'Lord'. However, the study of the Sangam literature shows that this is a reference to Baratavar,⁷¹ who inhabited the coastal region of Tamil Nadu and engaged themselves in trade and fishing. It is very likely that with the territorial expansion of the state many other forms also would have been disappeared through the process of assimilation and Buddhisisation.

Moreover the nature of the above inscriptions in fact show that more than one Dravidian dialect was in use during the Proto-historic times. These had branched off from a common Southern Proto-Dravidian base, as in the case of South India where the modern languages like Tamil, Kannada, Telugu and Malayalam. In Sri Lanka too, it is very likely that the Proto-Sinhala namely Elu probably had branched off from the Proto-Dravidian and developed as a separate language from a common Proto-Dravidian base, as Tamil. These are the people who are exposed to Buddhism and its canonical language, namely Pali. Hence the language of these Brahmi inscriptions is certainly not the language of the people as often misunderstood. Instead, it was the language of the religion and monastery. It was only during the Post-Christian era when Buddhism was firmly rooted, the Prakrit language of the inscriptions began to mix with language of the people such as Elu.

This led to the fusion and assimilation and paved the way for the development of Elu language with a newly acquired Northern Prakritic influence into an independent Sinhala language. This has many parallels in the languages of the world.⁷² It is certainly the imposition of Pali (Prakrit) on Elu at a very early stage of development that led scholars to assign the Sinhala language with the North Indian Aryan language family without knowing its original Dravidian base. This original base had been highlighted by W. F. Gunawardhane⁷³ in the beginning of the present century and in recent times by an eminent linguist James Gair⁷⁴.

who like Gunawardhane is familiar with both Sinhala and Tamil languages, He observed that no one who has worked on Sinhala, Tamil and some Northern Indian Aryan languages such as Hindi can fail to get some global feeling of similarities shared between the first two in contradistinction to the latter.

At this juncture it is worthy to note the observations made by Susantha Goonetillke⁷⁵, who made a study of the process of Sinhalisation of the Island. He opines that 'Thus the available epigraphical evidence suggests that not a transfer of populations for Sinhalisation but the growth of the language associated with institutions connected with the Temple and of royalty from a language virtually indistinguishable from the Mauryan Prakrit'. He further asserts that 'there is no reliable evidence about the actual language of the people and in this absence we have to assume that the monastic language of Prakrit gradually spread to the population over a period of centuries, a process similar to the process of Sanskritisation.....'. Thereafter he concluded by saying that 'Sinhalisation was fundamentally a cultural process associated with Buddhism and that migration even if it did take place, was of a minor kind, so as not to have left a significant trace in the Archaeological data or in demographic terms on the population.

Thus one could identify several phases in the historical process of the development of civilization from food gathering and food production. Senaka Bandaranayke⁷⁶ has visualised this process in the form of four hypothetical transitions which are as follows:

Transition A:

The change from a nomadic, food collecting economy of pre-historic hunter gatherers to a sedentary, food producing economy of primitive farmers.

Transition B:

The transition from 'primitive' methods of food production to advanced agriculture, principally wet rice cultivation and small scale reservoir irrigation.

Transition C:

The subsequent and (perhaps even partly concurrent) process of the emergence of a literate, historical society marked by the appearance of clear social differentiation, early state formation and primary urbanization.

Transition D:

Finally the development of a centralized monarchical state.

The available data, however, shows that the transition from food gathering to food production was not effected by internal development. Instead, the archaeological record shows the superimposition of Protohistoric Iron age culture with socially advanced group of farming community over that of the Pre-historic population. This led to an interaction between these groups as evident from the legends of Vijaya-Kuveni marriage as well as from the archaeological data which show the presence of early historic Black and Red ware along with microlithic tools at Kitulgala, Kudumbigala and Seruvila.⁷⁷ Perhaps the developments within the Protohistoric and the early historic phases (both basal early historic and the lower early historic phases) - the formative period of our civilization were also a complex process

For, Senaka Bandaranayke⁷⁸ opines that undifferentiated or pre-class society i. e. of a tribal or lineage type into one that was stratified into distinct social groups or classes marked at some stage in its evolution by processes of state formation and urbanization came into the full light of history around the 3rd century B. C. This culminates in the development of that society into a centralized monarchical state 'unifying the entire land under its authority.'

The proliferation of writing as evident from the large number of inscriptions (which are about 1000 in number from the middle of the third century B. C to beginning of the Christian era running to one or two lines only) show the adoption of Buddhism by the Iron using Proto-Historic population as an officially sponsored doctrine and unifying and synthesizing ideology.⁷⁹ These inscriptions also show evidence for the transformation of the Pre-clan or Pre-state society into a class or state society. This is evident from the presence of tribal names such as Baratavar (Bata/Barata), Vels, Ays as well of the titles such as Parumakas (class of Aristocrats) Gamikas (village land lords), Gapatis (landowning mercantile class) as the owners and controllers of wealth and political power and dispensers of religious and economic patronage.

The occurrence of titles such as Raja (Raja) and Gamani (Gamini) in the Brahmi inscriptions indicate the presence of minor chieftaincies which were the prelude to the centralized monarchy as in the case of Tamil Nadu on the opposite coast which too had a similar pattern of Mudiudai Venthar (crowned kings) and Kurunilamannar (local chieftains). Economically too this phase witnessed the emergence of macro-eco-zones, incorporating several micro-eco-zones with developed forms of institutionalised structures.⁸⁰ However, the contact with the Urban centres both in India and outside through trade, accelerated the process of development towards civilization. Hence it is reasonable to argue that by the sixth century B. C. Sri Lanka possessed the main elements of civilization such as cities, writing, arts and crafts, architecture, coins and the political and the socio-economic structure, to qualify itself to be a civilized country.

In the light of the above discussion, it is now evident as mentioned in the Dipavamsa, the earliest of the Pali Chronicles written in the fourth century A. D., that the real provocation for the Vijaya story was the name applied to the Island. For, it says 'This Island of Lanka existed as Sihala after the lion. Listen to this Chronicle of the origin of the Island that I narrate'.⁸¹ It is very likely that a legend had been developed over the centuries by incorporating various stories of the Jatakas in order to explain the term Sihala,⁸² which began to be associated with a particular ethnic group as found in the Mahavamsa, written in the sixth century. A. D. This is also evident from the explanation given to Sihala, by the author of the Mahavamsa, as Sihala, denoted both the killer and the descendant of lion. Thus Mahavamsa⁸³ states that, 'But the king Sihabahu, since he had slain the lion (was called) Sihala and by reason of the ties between him and them, all those (followers of Vijaya) were called) Sihalas.' The form Sihala itself is a derivation from Ilam, one of the earliest names of our Island as shown by Burrow⁸⁴ who feels that even the form Ilam is Dravidian in origin. A similar phenomenon can be observed with regard to the form Tambapanni, one of the earliest but popular names for the Island. It has been shown that the original form of this is Tanporunai,⁸⁵ a river in the Pandyan country, which later became Prakritised as Tambapanni and Sanskritised as Tamraparni. This form is found in the writings of the Greeks and the Romans as Taprobane. Even the form 'Pandu' which occurs as the name of some of the early kings of the early historic phase, such as Panduvasudeva and Pandukabhaya may indicate the Pandyan connection. For, in the Pali Chronicles, the Pandyas are always referred to as 'Pandus'.

As correctly perceived by Susantha Goonetillake,⁸⁶ Sinhalisation was preceded by Buddhisation. Buddhist forms of worship began to supplant the Megalithic forms of burials. This is quite evident from the presence of Buddhist dagobas in the ancient burial sites such as Kantarodai, Pomparippu and Kataragama. It is opined that the Thuparama Dagoba, the earliest Dagoba of Sri Lanka, if excavated may reveal evidence for the Megalithic burials at its foundation.⁸⁷ This has parallels in the Andhrapradesh of South India as well.⁸⁸ Hence it is no longer possible to assert that there is no evidence to establish that a people of Dravidian stock who, in historical times, occupied the neighbouring mainland and on many occasions fought with the Sinhalese for the sovereignty over the Island, were present there at the time of the first Aryan settlements⁸⁹ or to uphold the view that the evidence available at present would tend strongly to support the conclusion that the Aryan settlements and colonisation preceded the arrival of Dravidian settlers by a few centuries.⁹⁰

This paper was presented at the First Annual Conference of the Jaffna Science Association in 1992. The author wishes to thank Prof. V. Sivasamy, Head, Department of Sanskrit and Mr. A. J. Canagaratna of the University of Jaffna for going through the draft of this paper and making valuable suggestions.

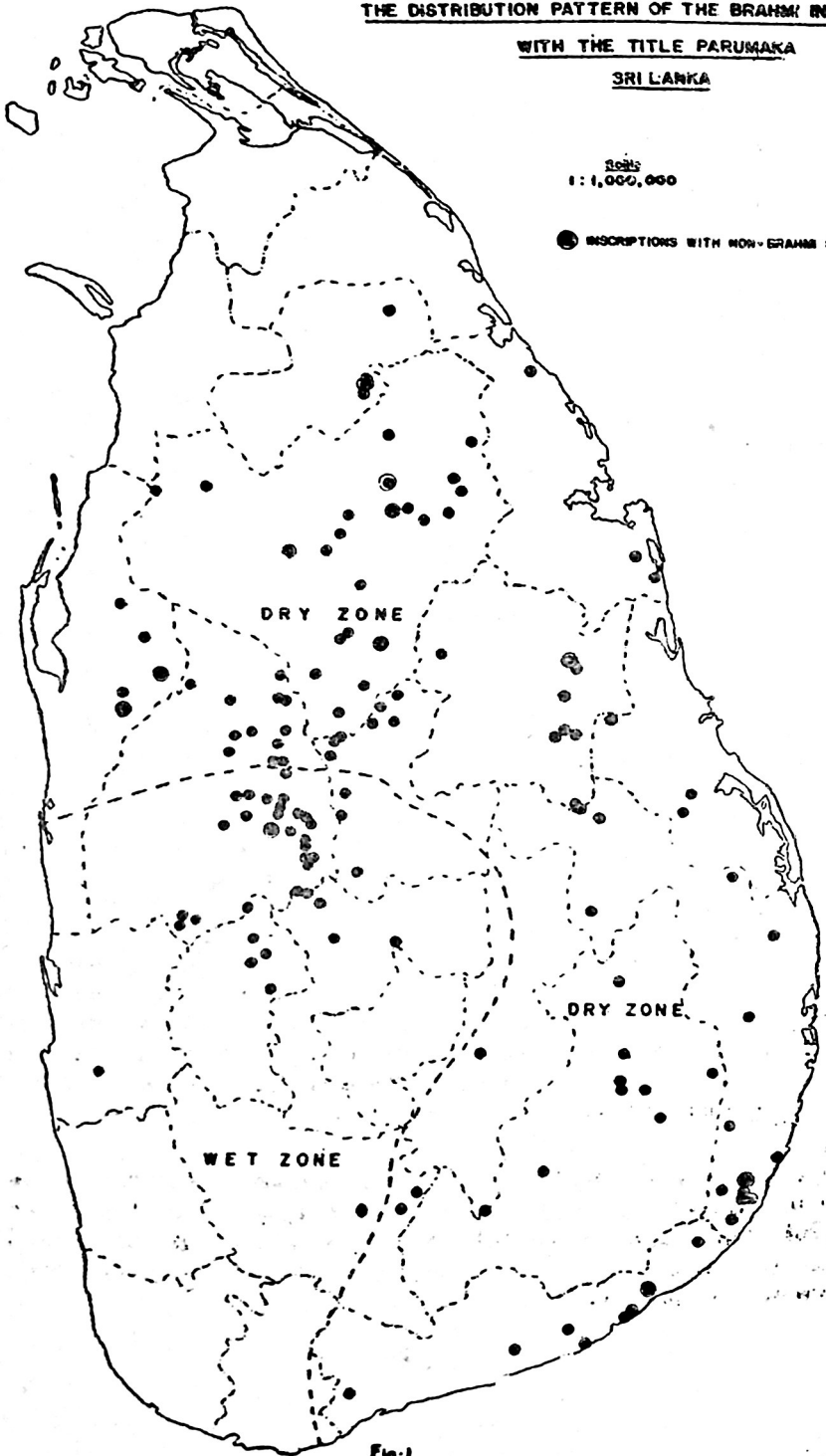
THE DISTRIBUTION PATTERN OF THE BRAHMI INSCRIPTIONS

WITH THE TITLE PARUMAKA

SRI LANKA

Scale
1 : 1,000,000

● INSCRIPTIONS WITH NON-BRAHMI SYMBOLS



Notes :

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2. Vimala Begley 1981. 'Excavations of Iron Age Burials at Pomparippu, 1970' *Ancient Ceylon*, Journal of the Archaeological Survey Department of Sri Lanka, p. 53.
3. S. Paranavitana 1959 (ed). *History of Ceylon* Vol. I. Part I (Colombo) pp. 82 - 97; H. Ellawala. 1969. *Social History of Ceylon*. (Colombo) pp. 101 - 110. K. M. De Silva. 1981. *A History of Ceylon*, (Oxford), 1981. pp. 7 - 116.
4. K. M. De Silva. *Op. cit.* p. 9.

(There is confusion in the accounts given in the Mahavamsa regarding the early settlements. While ascribing the foundation of early settlement at Tambapanni to Vijaya, the credit of founding the other settlements is given to Vijaya's companions in one instance and in another the credit for this is given to Vijay's successor Panduvasudeva's brother in laws. In chapter VII, vv. 43 - 45, while referring to Vijaya's companions it says that 'Here and there did Vijaya's ministers found villages. Anuradhagama was built by a man of that name near the Kadamba river; the chaplain Upatissa built Upatissagama, on the bank of the Gambhira river to the north of Anuradhagama. Three other ministers built each for himself, Ujjani. Uruvela, and the city of Vijita; the other version of the chapter. IX, vv - 9 - 11 is as follows: 'The place where Rama settled is called as Ramagama, the settlements of Uruvela and Anuradha (are called) by their names, and the settlements of Vijita, Dighayu and Rohana are named Vijitagama, Dighayu and Rohana. As opined by Mendis it is very likely that the names of the villages themselves antedated the names of the legendary founders''.

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8. S. P. F. Senaratne 1965. 'The Later Pre-history and Proto-history of Ceylon; Some Preliminary Problems'. *Journal of the National Museums of Ceylon*, Vol. I, Part I, (Colombo) pp. 7 - 8.

9. Senaka Bandaranayake. 1978. 'The external factor in Sri Lanka's historical Formation' *Ceylon Historical Journal*, (Colombo). Vol. XXV. p. 74.
10. Senaka Bandaranayake. 1984 'The Peopling of Sri Lanka: The National Question and some Problems of History and Ethnicity' *Ethnicity and Social Change*, in Sri Lanka, (Colombo).
11. K. M. De Silva. *Op. cit.* p. 6.
12. P. E. P. Deraniyagala. 1940. 'Balangoda Culture' *Journal of the Ceylon Branch of the Royal Asiatic Society*. (C. B.) Vol. XXXIV. No 92. pp. 351 - 73; P. E. P. Deraniyagala. 1956 'The Races of the Stone Age and of the Ferrolithic of Ceylon.' *Journal of the Ceylon Branch of the Royal Asiatic Society* (N. S.) Vol. 4. Part I pp. 1 - 21;
P. E. P. Deraniyagala 1963 'Pre-historic Archaeology in Ceylon.' *Asian Perspectives*. pp. 189 - 191; For more details of P. E. P. Deraniyagala's writings see *Ancient Ceylon*. No. 1. pp. 3 - 46.
13. S. U. Deraniyagala. 1985. 'The Pre-History of Sri Lanka: An outline, Festschrift' 1985 — *James Thevathasan Rutnam Felcitation Volume A. R. B. Amerasinghe and S. J. Sumanasekara Banda* (ed) (Colombo). pp. 14 — 21; S. U. Deraniyagala 1990a, 'Pre-historic Chronology of Sri Lanka' *Ancient Ceylon*. Vol. 6. pp. 211 - 250.
14. S. U. Deraniyagala 1985. *Op. cit.* p. 14.
15. S. U. Deraniyagala. 1990a, *Op. cit.* p. 213.
16. S. U. Deraniyagala. 1985 *Op. cit.* p. 16 - 17.
17. S. K. Sitrapalam. 1980, *The Megalithic Culture of Sri Lanka*. Unpublished Ph. D. Thesis, University of Poona, (Poona). Chapter 3 pp. 35 - 64.
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20. S. U. Deraniyagala. 1985. *Op. cit.* p. 20.
21. B. Allchin and F. R. Allchin. 1968. *The Birth of Indian Civilization*. (Harmondsworth) p. 320.

22. K. A. R. Kennedy 1974 'Palaeo — demography of Ceylon' in A. K. Ghosh (ed) *Perspectives in Palaeoanthropology* (Calcutta) pp. 95 -- 112.
K. A. R. Kennedy, Todd Disotell, William J. Roertgen, John Chiment, and John Sherry, 1986 'Biological Anthropology of upper Pleistocene Hominids from Sri Lanka. Batadomba lena Belilena caves.' *Ancient Ceylon* No. 6 pp. 67 - 168.
23. S. Paranavitana. 1959 *Op. cit.* p. 96.
24. S. P. F. Senaratne. 1969 *Pre-historic Archaeology in Ceylon*. Colombo p. 27.
25. S. U. Deraniyagala 1990a *Op. cit.* p. 229.
26. S. U. Deraniyagala 1973. 'The Geomorphology of three sedimentary formations containing a Mesolithic industry in the low-lands of the Dry Zone of Sri Lanka', K. A. R. Kennedy and G. L. Possehl (ed) *Ecological Backgrounds of South Asian Pre-history* (Cornell University) pp. 11 - 27.
27. S. U. Deraniyagala 1990a. *Op. cit.* pp. 214 - 218.
28. S. U. Deraniyagala. 1990b. *Op. cit.* p. 253.
29. K. A. R. Kennedy 1975. *The Physical Anthropology of the Megalith builders of South India and Sri Lanka*. (Canberra) p. 24,
30. S. U. Deraniyagala 1990b. 'The Proto and Early historic Radio carbon chronology of Sri Lanka' *Ancient Ceylon*. Vol. 6. p. 253.
31. *Ibid* p. 255.
32. J. G. Buhler. 1994. 'Indian Palaeography' *Indian Antiquary*. Vol. XXXII.
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35. K. A. R. Kennedy. 1975. *Op. cit.* p. 6.
36. S. U. Deraniyagala 1990b, *Op. cit.* p. 252.
37. S. U. Deraniyagala 1972. The citadel of Anuradhapura, 1969, Excavations in the Gedige Area'. *Ancient Ceylon* No. 2. pp. 48 - 162.
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46. Sudharsan Seneviratna. 1984. *Op. cit.*
47. Paranavitana. S. 1970a. *Sinhala*, (Colombo).
48. Vimala. Begley. 1973. *Op. cit.* pp. 191 - 186.
49. S. K. Sitrapalam. 1980. *Op. cit.* pp. 228 - 277.
50. *Ibid.* p. 199 - 228.
51. S. U. Deraniyagala 1972. *Op. cit.*
52. S. K. Sitrapalam 1980. *Op. cit.* p. 208.
53. *Ibid.* p. 210: The Anuradhapura excavations have shown that the Iron Age people knew terrapins deer, buffaloes, cattle and horse, although dog was notably absent. Along with the bones of the animals, bones of fish, turtle, sheep, goat and dog were found at Kantarodai. Anaikodai has yielded evidence for the utilization of shark, fish, turtle, crabs and cattle.

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66. S. Paranavitana. 1959. *Op. cit.* pp. 102-374.
67. *Ibid.* p. 103.
68. S. K. Sitrampalam. 1986/87. 'The title Parumaka found in the Sri Lankan Brahmi Inscriptions — A Reappraisal.' *Sri Lanka Journal of South Asian Studies*. No. 1. (New series) pp. 13-24.

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85. R. Champakalakshmi 1975 - 1976. 'Archaeology and Tamil Literary Tradition'. *Puratattva*, Bulletin of the Indian Archaeological Society, (New Delhi), No. 8. pp. 110 - 122.

See footnote No. 6 on page 120. It may be noted here, that Mahavamsa (Ch. VII. vv, 40 - 42) gives a fanciful explanation for this word. It says that: 'when those who were commanded by Vijaya landed from their ship, they sat down wearied, resting their hands upon the ground - and since their hands were reddened by touching the dust of the red earth that region and also the island were named Tambapanni.

86. Susantha Goonetilleke. 1980. *Op. cit.* p. 262.

87. S. U. Deraniyagala. 199b, *Op. cit.* footnote on page 262.

88. S. K. Sitrapalam. 1980. *Op. cit.* Plates XVII A & B.

89. S. Paranavitana. 1959. *Op. cit.* p. 95.

90. K. M. De Silva. 1981. *Op. cit.* p. 13.