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Preliminary Finding of Archaeology Excavation from Rajagalamahalena Cave in Eastern Province of Sri Lanka

K.M.A. KAPUKOTUWA[1], G. RANASINGHE[1], M.D.I.K. ABEYNAYAKE[1], E. G. J. SURANGA[1] AND VASANT SHINDE, NILESH JADHAV[2]

[1]*Department of History and Archaeology, University of Sri Jayawardanapura, Sri Lanka.*
[2]*Department of AIHC and Archaeology Deccan College, PGRI-Pune, India.*

Abstract: *The main objective of this research paper is to provide preliminary finding of archaeology excavations carried out at Rajagala in Ampara District, Eastern Province.Rajagalatenna, Ampara is famous for being a Buddhist temple complex from the 3rd century BCE.Rajagala monastic complex had been initially name as GirikumhiilaTissaPabbathaViharaya. Preliminary investigations revealed that prehistoric human activity took place in the natural cave of the area before the third century BC. Accordingly, from 2016 to 2019, selected cave called Maha Lena (ML) was excavated for further investigation. This cave was excavated jointly by Deccan College and University of Sri Jayawardanepura. Excavations in 2018 and 2019 revealed a large number of prehistoric evidence. Among them are stone tools, bone tools, animal bones and botanical remains. We have very limited knowledge of prehistoric research and information in the Eastern Province compared to the Low land Wet Zone of Sri Lanka. Accordingly, the focus was on research questions on the subsistence of prehistoric humans living in the caves of the Eastern Province and how environmental conditions have changed in relation to the wet zone. Faunal and botanical remains have been recorded from ML, denoting the prevalence of climatic conditions similar to those of the present.*

Keywords: *Rajagala, Ampara, Prehistory, Excavation, Mahalena.*

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Introduction

Hominies are thought to have occupied mainland Asia even before2 Ma (Baskaran *et al.*1986; Boivin *et al.* 2013; Clarkson *et al.* 2014) and evidencefrom southern Asia suggests that their presence could have been maintained (Raynolds and Johnson, 1985; Rendell *et al.*, 1989; Gaillard 2006). Some authors do not exclude the possibility that H.erectus could have evolved in Asia from an earlier form

of Homo (Boivin *et al.* 2013; Blinkhon *et al.* 2013). Continuity in the occupation of these lands may be supportedby the early appearance of Acheulian industries,especially in South Asia (1.5e1.2Ma at Attirampakkam, Pappu *et al.*,2011).Recent studies suggest a coastal dispersal of early human populations from eastern Africa to southern Asia ca. 60-50 kya BP (Mellars *et al.* 2013, Boivin *et al.* 2013). Evidence of human settlement in the Indian peninsula has been found about one million years ago. The history of India begins with evidence of human activity of Homo sapiens as long as 75,000 years ago, or with earlier hominids including Homo erectus from about 500,000 years ago. Isolated remains of Homo erectus in Hathnora in the Narmada Valley in central India indicate that India might have been inhabited since at least the Middle Pleistocene era, somewhere between 500,000 and 200,000 years ago (Petraglia *et al.* 2009;Mellars *et al.* 2013; Clarkson *et al.* 2014;Boivin *et al.* 2013; Mishra 1995; Blinkhon *et al.* 2013).

Lanka's Prehistory cannot be considered in isolation from India in view of the close proximity of the two countries (Deraniyagala 1992). Sri Lanka was connected to the Indian mainland at numerous times during the last 500,000 years as a direct result of fluctuations in the Indian Ocean's sea-level and most recently at various intervals during the Terminal Pleistocene (ca. 26–12 kya BP) (Deraniyagala1992; Kennedy *et al.* 1983; Perera 2010). Sri Lanka's prehistoric phases have generally been differentiated between two successive technological traditions: (1) a Middle Paleolithic and Mesolithic tradition. The earliest evidence of human dispersal in Sri Lanka possible to go back 300,000B.P.. Although no fossil evidence has been found so far, it does mean that there were no human settlements in Sri Lanka during that period. In terms of accessibility and access to food and water, the ecological settlement of the country may not be an abstain. The lower gravel horizon of the site at *Bundala, Levagangoda* discloses the fact that its origin may have occurred during the Holstein period at 300,000B.P. Though we need further clarification on the subject, associated collection of stone artifact in the gravel horizon suggests geological grounds flavored by typological affinities, a possible lower Paleolithic phase of Sri Lanka prehistory at ca. 300,000B.P. (Deraniyagala 1992, Wejepala 1997). Modern human life has taken place in the West African region about between 150000- 200000 years ago. They then reached the Asian continent about 50000 years ago. The Homo sapiens further spread across South East Asia and reached Australia around 40,000 years ago (mtDNA analysis) (Clarkson *et al.* 2014;Misra 1976; Petralia *et al.*2009; Endicott *et al.* 2007).

However, research done in Sri Lanka shows that the facts about the modern human being are around 125000 years ago (Deraniyagala 1992,Wejepala 1997,Perera 2010).Bundala Pathirajawela and Minihagal kanda are some of the prime attractions in Sri Lanka. The above sites belong to the southern coastal plain of Sri Lanka. This beach is considered as a sandy beach. The sand dunes cover a large area, and beneath it is a layer of gravel. These have decayed for some time and have become dark reddish brown. Archaeologists have called this soil type is Iranamadu formation. According to research carried out in the gravel layer near Pundirajawela in Bundala, there has been evidence of human settlement since 125,000 74000, 64000, 28000 B.P. (Deraniyagala 1992). Evidence from the Bundala Pathirajawela indicates that the prehistoric period in Sri Lanka can be considered as the middle Paleolithic phase. Surface indicators of archaeological sites of that era indicate that they are about fifty meters or less. Evidence from these sites suggests that humans living in them can be trusted by hunting and gathering food. The people who lived in the middle Paleolithic era were hunters and gatherers it has been revealed that the people who lived Mesolithic people were very similar. It is said that the earliest humans from late Pleistocene age fluctuated during the physical and biotic environment and during the inter-rainy season. It has been estimated that the population density in the North East and South dry regions of Sri Lanka

was between 1.5 to 4 per square kilometer. during some pluvial episode periods in South Asia about 100,000 years ago.

Evidence of the prehistoric people of Sri Lanka is found in the Mesolithic phase Roughly this has been around for 50,000 B.P. Mesolithic human settlements such as the Fahien cave (48000B.P.), Batadobalena (37000B.P.), Kitulgala Beli Lena (31000B.P.), Attanagoda Alulena (10350B.P.), Alawala Potgullena (14000B.P.), Bellanbedipelessa (12000B.P.), Belilena Atula (8230B.P.), Batatota Dahaiyalena (7680B.P.), Sigiriya Potana cave (5800B.P.), Aligala cave (B.P.)(Deraniyagala 1992, Wejepala 1997, Adikari 1997, Perera 2010) are the reliable settlements of the Mesolithic period. According to the chronological records of these sites, the Mesolithic period can be said to be complete. By the Mesolithic, the prehistoric man had been present in virtually every ecosystem in Sri Lanka, from arid regions such as Horton Plains to Mannar and Wilpattu.

The Site

Biogeographically, Rajagala area lies within the low country Dry Zone. It supports tropical natural vegetation with grassland, rocky plains, plains, water streams, rough gradients and man-made tanks. The setting of this study spans an area of 4.1 km^2 square kilometers. Rajagala located at an elevation of 346 m above sea level in the middle part of the mountain. The area in which site is located is a remarkable zone according to its geological evolution complexity and geomorphologic variability. Rajagala archaeological site which could be approached through Ampara - Mahaoya highway near the Rajagalathanne village (Map.1). The area lies within "N 070 29'42" and E 810 36'54". Ampara in the dry zone is surrounded by agricultural province holds. The mean temperature is the 300C. The Highest temperature is 36^0C. The lowest temperature is 240C during December and January periods. Annual rainfall is 1400mm and it rains during monsoon time. The dry season from March to September. The rainy period falls from October to February.

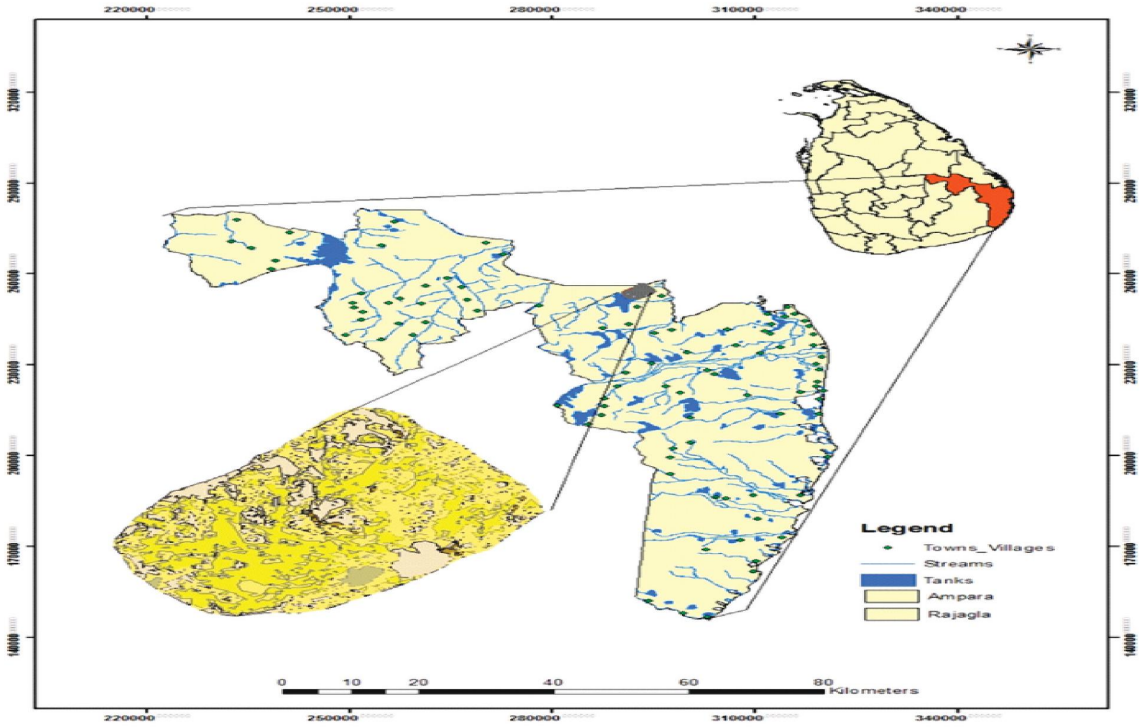
Material and Methods

Excavation of the Pleistocene rockshelter of ML has yielded a well- sealed and major cultural sequence covering the Mesolithic phase of Sri Lanka (Fig.1). In the 2019 season of excavation at ML, the main objective of the excavation was to trace out prehistoric level in pit number 3, and excavating below to the ash layer uncovered in the previous season(Fig 02).An ash pit was uncovered in the trench in the north eastern corner in layer 8 in the last season of excavation. The first task was to remove the stone boulder and find out the extension of the below lying ash pit. The northern section of the trench or pit 3 showed heavy disturbance or intermixing between early historic phase and Mesolithic phase in the upper layers of the pit 3 therefore the stratigraphy of the pit was drawn from the eastern section of the pit. The South western quadrant was blocked off by a large boulder as evident from the figure. The first two layers are recent humus deposition while from layer 3 onwards we start finding the early historic material such as pottery fragments, brick fragments, bones, shells, shell fragments and microliths. From layer 7 onwards the amount of microliths in the strata increases. Pit 3 was excavated till the level of the ash pit which extended into the north eastern section of the trench. Ash pit was excavated further and it was found that it extended in the northern as well as eastern section of Pit 3. The digging was stopped as the slanting granite rock slab adjacent to the pit extended into the eastern section of the pit. Pit 3 was extended into the northern direction as a huge number of granite rock slabs decreased the amount of area to be excavated in Pit 3, as well as to check the extent of the ash pit. Pit 4 measuring 2x2 meters was dug adjacent to the Pit 3 to the north of the pit 3.

Figure 1: General Overview of the Mahalena Cave Site

In the north western and north eastern quadrant of the pit 4 excavations was stopped as we reached the cemented floor made during the Early Historic (Anuradhapura Period) inhabitation period. This cemented floor is present on the ground level at the back of the ML cave. South eastern and south western quadrant of pit 4 was excavated till the level of ash pit in Pit 3. Below layer 3 in Pit 4, a huge dump of early historic material which included pottery pieces, brick pieces, roof falls and the plastered ceiling of the cave were found along with the microliths. Early Historic activities such as making up the floor of the cave during the Early Historic (Anuradhapura period) inhabitation might have caused intermixing of the Early Historical and Mesolithic culture material. The horizontal thick granite slabs uncovered in the trench and present in eastern section of pit 3 and pit 4 seems to be intentionally placed for making the floor during the early historic inhabitation period, the bedding of the cemented floor is made up of small stones which include quartz nodules as well. Layers 4,5,6,7 are not differentiable in Pit 4. After removal of the horizontal stone slab in Pit 4, the dump continues till the ceiling level of layer 8 from Pit 3. Even here we find the broken pieces of plastered roof, broken pieces of the cemented floor and pieces of bricks. On reaching the level of the ash pit near the base level of layer 8, the quantity of the microliths increase as previously noticed in from layer 7 onwards in Pit 3.

Researchers are expecting the Layer 8 to be the main Microlithic strata as majority of the microlithic finds are from this layer which includes the ash pit. The ash pit extends into the south western and south eastern quadrants of pit 4. Seeing the extent of the ash pit in Pit 4 it was treated separately as layer 8a. Going below from the layer 8 in Pit 3 we find the weathering rock bed just 5-10cm away in the South Eastern corner of Pit 3. Microliths are concentrated near the ash pit in Pit 3, while a very few specimens were discovered in the south eastern quadrant of pit 3, away from the ash pit. Ash pit goes below the level of layer 8 in Pit 3 and Pit 4. We excavated around 60cm of the ash pit below the level of layer 8 before the slanted rock slab in Pit 4 cut off the area for further digging extending into the eastern section of the Pit 4. The ash pit extends into the eastern section in Pit 4 and is suspected to continue further of the eastern section of the trench. The slanting rock slabs found below the horizontal ones are most probably natural and were present during the Mesolithic inhabitation period. The two slanting rock slabs in Pit 3 and Pit 4 may have acted as a natural wall to their hearth or ash pit. Ash pit consist of many microlithicartefacts alongside bone tools, bone fragments of small animals such as rats, birds etc, shells and shell fragments. One shell bead was found from the ash pit as well. No signs



Map 1: Map Showing Site of Rajagalatenna

of heat treatment were seen in the microliths found in the ash pit. Most probably they were thrown into the pit after they were discarded. Total absence of historical material from the ash pit as well as from lower limit of layer 8 in both pit 3 and pit 4 points towards the fact that this layer was not disturbed by natural or man - made causes.

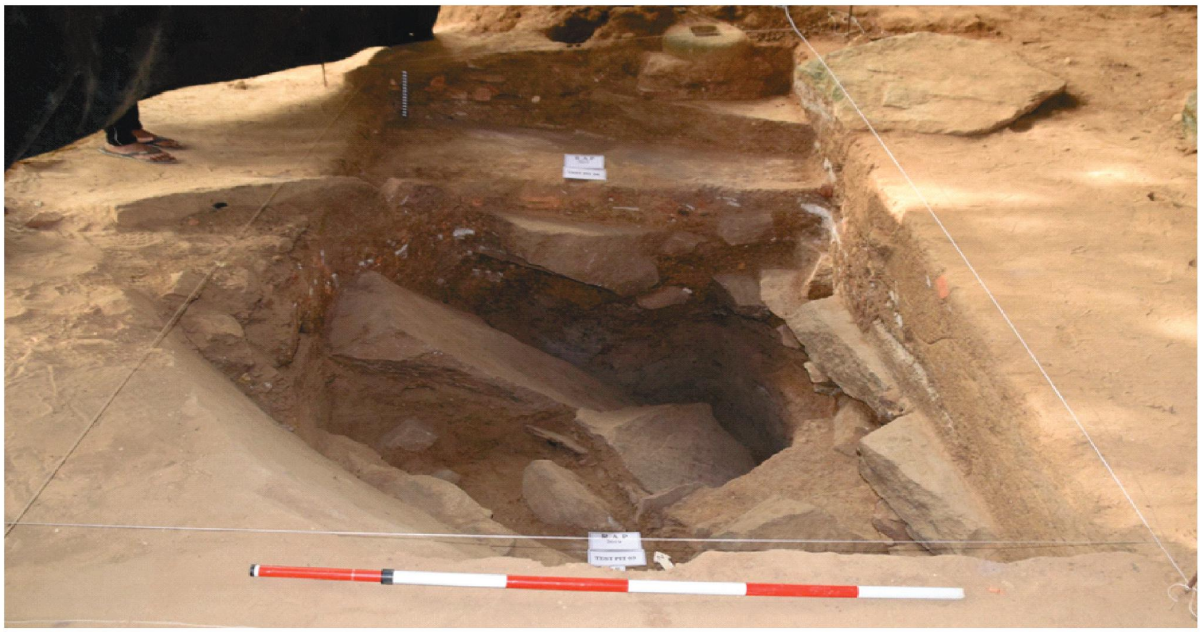


Figure 2: Extent of the Ash pit in Pit 3 and Pit 4

Due to the nature of the soil, being compact in nature and hindrances caused by the granite rock slabs in the trench, most of the artifacts were collected through dry sieving and sorting. Digging went slowly only a few centimeters at a time and was recorded on the basis of Lots and Layers. Layer 8 in Pit 3 was dug even slowly and photographs were taken of the embedded artifacts. The general orientation of the artifacts was closer to 90 degree and they were located close to the ash pit. Charcoal samples were collected from Layer 8 as well as Layer 8a (ash pit) from the section on the last day of the excavation. Botanical remains were segregated from the soil samples by sieving, visual inspection and classified in Palaeobotany laboratory under low power Stereo-binocular (LEITZ WETZLAR) microscope. It has been found that, the plant remains did not actually catch fire during conflagration but burnt slowly, retained their shape and fine morphological details. In most of remains the surface is partly eroded and the artifacts of carbonization could be seen. These were critically studied and identified on the basis of external morphological features also, photographed satisfactorily under a research trinocular stereo macroscope (WILD PHOTOMAKROSKOP-M 400 1,25x). The features were then compared with wild and cultivated materials to aid the identification. The measurements were noted with the help of eyepiece micrometer. To devise sampling strategies for the recovery of various categories of animal remains bones of mammals, reptiles, birds, fishes, shells crustaceous.ets. The assemblage included faunal remains from Rajagala careful labeling of specimens with exact context data the lifting and packaging of specimens washing and drying of material labeling of all elements recovered storage of material awaiting analysis and card index end catalogue of all samples with full context details this material was brought from the Rajagala at to University of Jayawardanapura.The identification was made by comparing the reference collection they lived in wet on day zone forest of Sir Lank end also the wild animal lived deer, sambur, buffalos, monkey, mongoose, wildcat, Leopard for which mainly considered in country. Department of archeology has a good collection of skeletons of modern animals for comparative studies.

Results

Excavations were carried out on ML (pit 3 and pit 4), slightly over 1254 stone artifacts including flakes, cores and debitage pieces were uncovered during this excavation with 867 recorded from Pit 4 and 387 recorded from Pit 3. 337 flakes were analyzed from the Layer 7 onwards (Table 1).

The result of stone artifacts recorded from pit 3, contains blades and flakes and small debrie pieces. Predominantly contains flakes with a few examples of bipolar cores and blades, one possible point was recovered (Fig.3). The orientation of the artifacts near the floor level of Layer 8 was closer to 90 degrees. Some artifacts were found near shell fragments and majority of the artifacts were located in the area surrounding the ash pit. The quantity of cores in the ash pit increases compared to other layers with examples of core opening flakes, blades and a few examples of other possible geometric microliths such as triangles, trapeze and point. Pit 4 predominantly contains flakes/flake fragments. The source of the raw material was probably the quartz veins in the granite rocks present in the region. Quartz though being a very unsuitable material for flaking due to its unpredictable fracture mechanics was used because of its easy availability in the vicinity of the ML cave. No artifact was found on any other material except quartz. One specimen of unidirectional blade core was recovered from the ash pit while many specimens of bipolar cores were recovered from the ash pit (Fig.4). The presence of high numbers of split flakes, crushed platforms on flakes, flake fragments, shattered debrie in the assemblage recovered from the ash pit and undisturbed lower layers of pit 3 and 4 reveals usage of greater amount of force while production of the artifacts. It can also be attributed to the unpredictable fracture pattern of quartz raw material, impurities in the quartz raw material and low amount of control over flaking in

bipolar method. No anvils were found during this season of excavation. A very few possible examples of geometric microliths types such as points, triangles, trapeze are present in the assemblage.

Table 1: Counts of Lithic Artifacts by Layer

Layer 8a (Ash Pit)			*Layer 8*			*Layer 7*			*Layer 6*		
	Pit 3	Pit 4		Pit 3	Pit 4		Pit 3	Pit 4		**Pit 3**	**Pit 4**
Flakes/Flake fragments	51	54		30	113		5	0		5	0
Blades	0	0		0	0		1	0		0	0
Bladelets	8	11		7	18		0	0		0	0
Core	9	21		3	4		1	0		0	0
Core Fragments	7	5		0	0		0	0		0	0

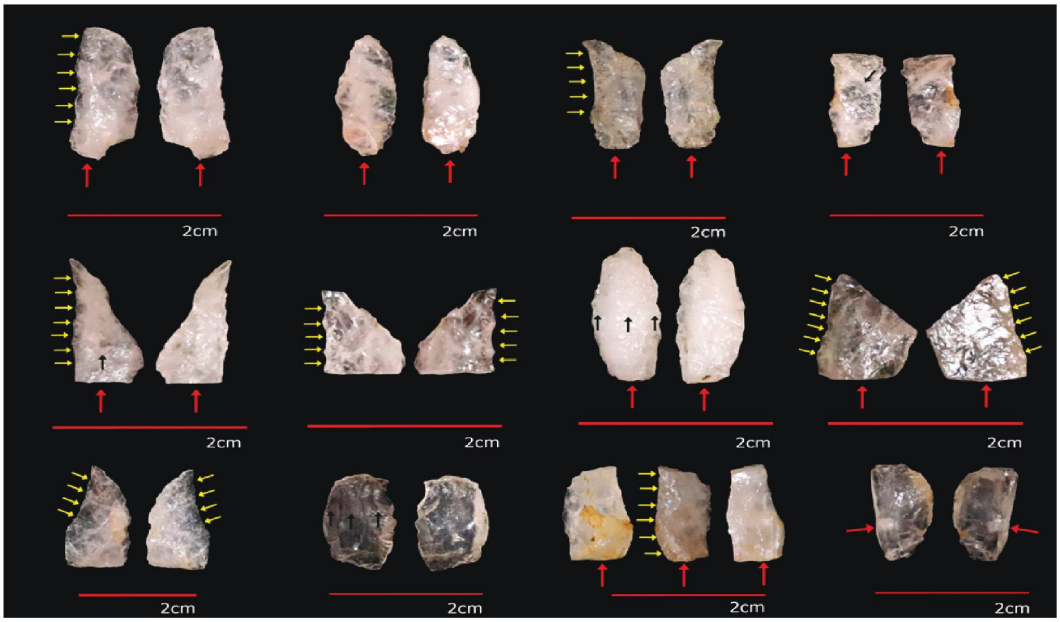


Figure 3: From left – (1,3,5,9,11) Non geometric microliths showing possible signs of retouch, (2,4,7) Non geometric microliths, 6 – a broken retouched tool, 10 – Broken bladelet, 12 – flake with a crescent morphology. Red Arrows – position of the bulb, Yellow arrows – position of retouch, Green arrows – position of flake scars on dorsal surface of microliths.

Figure 4: Quartz Hammerstone with Battering Marks

The archaeobotanical analysis is exclusively based on twenty samples of well-preserved carbonized plant remains. All the samples were represented by the fragments of wild fruit nuts with charcoal bits. These nuts are of Aleuritesmoluccana (L.) Willd.Commonly called candlenut/Indian walnut/Kekunabelongs to family Euphorbiaceae. Nuts are drupe, sub spherical, somewhat laterally compressed, measuring 2.3 cm long and 1.07 cm broad, ovoid, smooth in surface (Fig. 5). These candlenuts are often used cooked called kemiri in Indonesian and buahkeras in Malaysian cuisine (Orwa *et al.* 2009). Nowadays candlenuts are used as food and candlenut oil is in use in South East Asia and Pacific. By removing the outer hard coat the seeds are pounded and eaten as a thick sauce. 100 gram of seed contains 626 calories energy, 63 gm fat, 19 gm protein, 8 gm total carbohydrate, 7 gm water, 3 gm ash, 200 mg phosphorus, 80 mg calcium, 2 mg iron, and 0.06 mg thiamine. The seed oil is used as a substitute for diesel suitable with its modification and the residue is used for conversion to alcohol or pyrolysis. The Mesolithic habitation at Batadombalena (28000 – 11500BP), BelilenaAthula (8000BP.), Pothgul Lena Alawala (16000BP.) in wet zone has yielded large quantities of the edible nut *CanariumZeylanica* (Kekuna). Remains of *CanariumZeylanica* were found in prehistoric levels of Rajagala ML excavation. This tree is not found in the dry zone. The nut stone were used for cracking nuts of *CanariumZeylanica,* and absence of this lithic types in the prehistoric deposits of dry zone, as opposed to those of the wet zone where it is common, could signify that this tree did not at any time, during the Mesolithic phase of Sri Lanka, grow in the dry zone, which in turn could mean that a wet zone type of rain forest never existed during this period in what is today the dry zone (Deraniyagala 1992).

Faunal assemblages are collected from the Rajagla ML archaeologicalexcavation has been dealt separately in the following discussions. More than 32 species of animal belonging to mammals, reptiles, bird, mollusks, crustaceous, and fish were identified from the excavation. Total number of animal bones end shells find out from the Rajagla ML archaeological excavation site is 4935 comprising seven excavation layer for the analysis maximum number of bones are found 404, shells 197 respectively(fig.6). The identifiable bones element considerable number of unidentifiable bones high degree of very small fragmentation of bones this may be due to human and taphonomic activities.

Figure 5: Nuts of Aleuritesmoluccanus (L.) Willd. (Candlenut/Indian walnut/Kekuna)

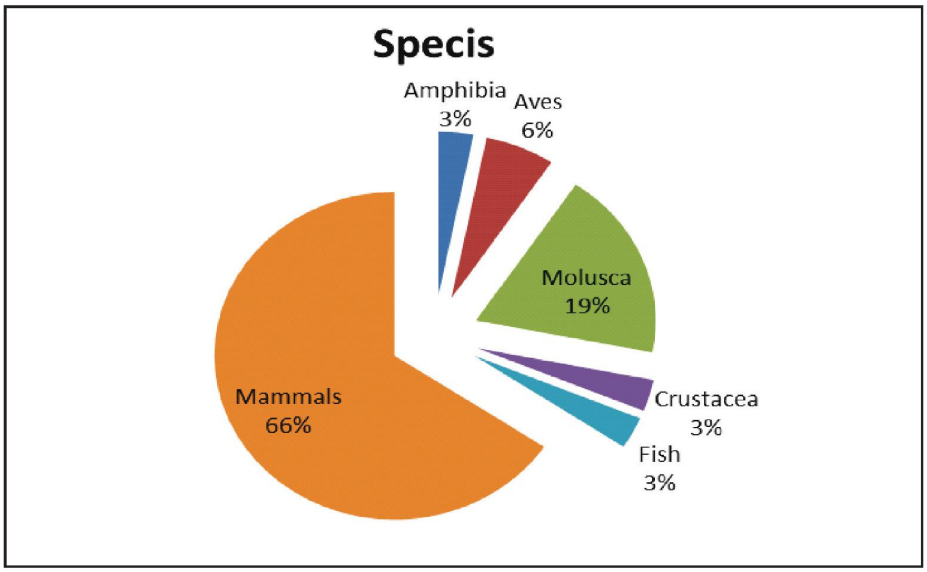


Figure 6: Chart Showing Relative Propotion of Faunal Specis

The excavation in Rajagala habitation yielded a very large quantity of faunal remains from the Mesolithic horizon and the following forms have been identified (Perea 2019): **MAMMALIA-** *Canisaureuslanka*, Ceylon Jackal, *FelisSp*, Wild Cat, *PantheraPardus*, Leopard, *Viverriculaindika,* Ceylon Small civet – cat, *Pardoxurussp*:, Common Indian palm – cat, *Herpestessp*: , Mongoose , *Lutaralutra*, Otter: **ARTIDACTYLA-** *BubalusBudalis* Water buffalo, *Axis axisceylonensis,* Spotted deer, *Cervus unicolor*, Sambur, *SusScrofa*, Wild Pig, *MoschiolaMeminna*, Mouse Deer: **PRIMATE-** *Semmopithecus Priam*, Tufted Gray Languor, *Trachypithecusvetuluvetlus*, Purple –faced Leaf Monkey, *Macacasinicasinica*, Toque Monkey: **RODENTIA-** Mouse Rat, *RattusSp*:, Rat, *Hystixindica*, Porcupine, *Petinomysfuscocapillus*, Small Cleon Flying –Squirrel, **REPTILES-***SerpentoidSp*:, Snake, *VaranusBengalensis*, - Land Monitor,*MelanochelysTriiuga*, Terpin - Hard Shelled, *LissemysPunctata*, Terpin - Soft Shelled.

Among the molluscs at Rajagala were numerous specimens of the arboreal forms Acavus*sp., bddomea sp. Cyclophorus sp. Tortulosa sp*. and *Lamellidens sp*.(Table 1).The excavation in the caves of Beli Lena, Batadomba Lena, Alu Lena, Kabaragalge, Beligalage, Beli Lena, AlawalaPotgul Lena have yielded numerous specimens of the arboreal forms *AcavusProsperus*and *Acavusreseolabiatus* (Deraniyagala 1992; Wejepala 1997; Perera 2010; Adikari 2009). Batadomba Lena has radiocarbon dating from 28500 to 12000BP. have yielded numerous specimens of *A. Prosperus* and *A. Phoenix*, which are the same as the species occurring in the vicinity of the cave today(Draniyagala 1992). Acavus has been found in numerous Mesolithic cave habitations in dry zone, notable instance are Bellan-bandipalassa, Udupiyangalge, AlugalgeTelulla, Nilgala cave. *Acavus* is not live in the dry zone of Sri Lanka. Above snail faunal data suggests that *Acavus*was brought into dry zone by prehistoric man perhaps as an ornament or as an item of exchange.

Discussion

Preliminary analysis of some artifacts revealed that the artifacts are predominantly made from free hand percussion technique as well as the bipolar technique. The raw material used for the production of Microliths was quartz of both clear and milky variety. The source of the raw material was probably

the quartz veins in the granite rocks present in the region (Fig.4). Quartz though being a very unsuitable material for flaking due to its unpredictable fracture mechanics was used because of its easy availability in the vicinity of the ML cave. No artifact was found on any other material except quartz. One specimen of unidirectional blade core was recovered from the ash pit while many specimens of bipolar cores were recovered from the ash pit. The presence of high numbers of split flakes, crushed platforms on flakes, flake fragments, shattered debris in the assemblage recovered from the ash pit and undisturbed lower layers of pit 3 and 4 reveals usage of greater amount of force while production of the artifacts. It can also be attributed to the unpredictable fracture pattern of quartz raw material, impurities in the quartz raw material and low amount of control over flaking in bipolar method. One quartz hammer stone was uncovered from season 2018-19 with battering marks all around its edges which implicates free hand percussion technique might have been in use. No anvils were found during this season of excavation, though the granite slabs present inside the trench could have been used as anvils. A very few possible examples of geometric microliths types such as points, triangles, trapeze are present in the assemblage. The geometric microliths types can be deemed unintentional or as byproducts of the flaking as their quantity is quite less in number. Possible retouch in the flakes is predominantly used for a backing purpose, while retouch on the sharp edges can be attributed to use – wear or it could be due to post depositional edge damage as we find intermixing of layers above layer 8 due to natural or man-made causes. Natural nodules of quartz and its fragments are also present in the trench, so while sorting it was seen to that the least expected specimens bearing signs of free hand percussion or bipolar percussion were put in the category of natural breakage because flakes taken out through bipolar percussion might resemble natural breakage as well.

The nut stone were used for cracking nuts of *Canarium Zeylanica*, and absence of this lithic types in the prehistoric deposits of dry zone, as opposed to those of the wet zone where it is common, could signify that this tree did not at any time, during the Mesolithic phase of Sri Lanka, grow in the dry zone, which in turn could mean that a wet zone type of rain forest never existed during this period in what is today the dry zone (Deraniyagala 1992). Faunal assemblages are collected from the ML archaeological research project and have been dealt separately in the following discussions. More than 32 species of animal belonging to mammals, reptiles, bird, mollusks, crustaceous, and fish were identified from the excavation. Total number of animal bones end shells find out from the Rajagla ML archaeological excavation site is 4935 comprising seven excavation layer for the analysis maximum number of bones are found 404, shells 197 respectively. The identifiable bones element considerable number of unidentifiable bones high degree of very small fragmentation of bones this may be due to human and taphonomic activities.

Conclusion

In the 2019 first phase of excavation at ML was very limited, but provided quantitative data available are sufficient to understand the technical behavior in the prehistoric context. Analysis of the stone artifacts recovered from excavations indicates that the technology, material, plan form and function is similar to the stone artifacts recorded in other eco zones of the island. The dominance of the assemblage are non-descript plan form. The typology/ technology of the lithic assemblage excavated and analyzed focuses on production of small blades and flakes using the locally available raw material which is in accordance with the lithic assemblage found at sites like Batadomba-lena, KitulgalaBeli-lena and FaHien-lena in Sri Lanka. A more detailed recorded about the assemblage requires a thorough analysis of the whole assemblage. Bones, teeth of small animals such as rodents, monkeys etc and shells in the ash pit are present with the lithics. Some bone tools were also recovered from the trench as well. The

aforementioned characteristics are in accordance with other sites present in Sri Lanka. The difference arises with the location of ML Cave as it is located in the dry region of the Sri Lankan climate while others are present in the wet zone region.

Faunal and botanical remains endemic to the wet zone found among the Rajagala deposits clearly correspond to the ecological pattern of the late Pleistocene wetland. *CanariumZeylanica* and *Acavus sp*. endemic to the wetlands may have been brought in by prehistoric man. This implies that there was an exchange between the ecological zones. Palynological evidence gathered from the caves at Beli-lenaKitulgala, Batadomba-lena,andBellanbandiPalassa suggests that early Mesolithic groups in the interior and hinterlands exploited a wide range of food-plants which included canarium nuts, wild breadfruit, wild bananas, and dioscorea yams. Faunal evidence from Rajagala suggests a range of animals were eaten that included small vertebrates such as porcupine, mouse-deer, giant squirrel, flying squirrel, civets, pangolin, monkeys and rats, several species of birds, snakes, mollusks and a number of various types of fresh have been documented. It is clear that there has been no drastic environmental change in the analysis of the present ecological formations around the Rajagala and the botanical remains found during the excavations. palyno-stratigraphic study of two peat swamps in the wet highlands of Sri Lanka's Horton Plains, Premathilake and Risberg (2003) presents a useful summary of generalized climatic trends on the island over the last 25 kya (Premathilake and Risberg 2003). The pollen spectra suggest semi- arid condition and relatively species poor plant community 20000- 15500BP. The snail fauna at Batadombalena ,Belilena from 28500- 11000BP. indicates that moisture condition during this time span of late Pleistocene to early Holocene were scarcely drier than those prevailing today. The above data suggest that the temperature in Sri Lanka had not dropped by more than 60C between 28000 and 13000BP. and not in excess of 3^0 C between 13000 and 11200BP. (Deraniyagala 1992).

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