

## **An Archaeological Study on Prehistoric Human Evidence Found So Far in Sri Lanka**

**Uduwila Uparathana<sup>1</sup>**

### **Abstract**

The prehistoric human record of Sri Lanka plays a critical role in the study of human evolution in the South Asian region. The primary objective of this research paper is to analyze the biological and cultural behavioral patterns of prehistoric humans (specifically belonging to the Mesolithic era) based on human skeletal and cultural evidence found so far in Sri Lanka. Excavations carried out in the wet zone caves of Sri Lanka (Fa Hien-lena, Batadombalena, Kitulgala Belilena, and Alugalge) have revealed evidence of *Homo sapiens* dating back to over 48,000 years. Scientifically identified as 'Balangoda Man' (*Homo sapiens balangodensis*), this study investigates factors regarding their morphological features, dietary patterns, and the use of technical tools. As the research methodology, a secondary data analysis and a comparative study of data obtained from archaeological excavation reports were

conducted. In particular, stratigraphic excavation reports by Dr. Deraniyagala and Dr. Nimal Perera were utilized as primary sources. The results of the study indicate that prehistoric humans successfully adapted to environmental changes (Last Glacial Maximum) while utilizing Geometric Microliths. Dental and skeletal analyses confirm that these humans, possessing Australoid features, fulfilled their protein requirements by consuming animals such as tree snails, monkeys, and giant squirrels. Furthermore, evidence suggests they possessed complex social behavioral patterns, such as burial rituals involving the application of Ochre. This research concludes that Sri Lanka is significant as a center providing the oldest evidence of modern humans in the South Asian region, and that Balangoda Man was a human group demonstrating high physiological and technological evolution in adaptation to their environment.

**Keywords:** Balangoda Man, Bio-archaeology, Mesolithic, Microliths, Prehistory.

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1. Senior Lecturer, Department of Social Sciences and Comparative Studies, Bhiksu University of Sri Lanka.

E-mail: [uparathana@busl.ac.lk](mailto:uparathana@busl.ac.lk)  <https://orcid.org/0000-0002-3415-7917>



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## Introduction

The history of human settlement in Sri Lanka dates back to approximately 125,000 years, as confirmed by stone tool evidence found in association with the Iranamadu soil complex (Deraniyagala, 1992). However, clearer and more systematic human skeletal evidence is found during the late Pleistocene and early Holocene periods. This era is identified by archaeologists as the Mesolithic period of Sri Lanka. As a result of research initiated in the 19th century by the Sarasin brothers (Fritz and Paul) and later by P.E.P. Deraniyagala, the concept of 'Balangoda Man' was established (Kennedy, 2000).

Human evidence discovered at sites such as Fa Hien-lena, Batadombalena, Bellanbandi Palassa, and Kuruwita is considered the oldest evidence of the existence of Anatomically Modern Humans in the South Asian region (Perera, 2010; Sumangala, 2025b). The primary approach of this paper is to study the adaptations these humans made to their environment in terms of subsistence patterns, technology, and rituals.

## Research Problem

Although much research has been conducted on prehistoric human remains found in Sri Lanka, there is a need to foster a broader dialogue on the interrelationship between the physiological evolution of these humans and their environmental adaptation. Specifically, the fundamental problem of this research is: "How did Balangoda Man separate from other prehistoric

humans in South Asia to build an independent bio-cultural identity?"

## Research Objectives

1. To investigate the main prehistoric human skeletal evidence found in Sri Lanka and its dating.
2. To analyze the morphological features and health status of Balangoda Man.
3. To study how their dietary patterns and technical practices (microlithic tools) evolved based on environmental factors.

## Research Methodology

This research is conducted using the Qualitative Research Methodology. Primarily, Secondary Data is utilized, and the following sources are used for this purpose:

- Archaeological Excavation Reports: Excavation reports of Fa Hien-lena, Batadombalena, and Bellanbandi Palassa published by the Department of Archaeology, Sri Lanka.
- Research Books and Articles: Research papers by scholars such as S.U. Deraniyagala, Nimal Perera, Raj Somadeva, and Kennedy.
- Carbon Dating (C14) Data: Comparison of dating data obtained from various strata.

The obtained data is analyzed using the Content Analysis method to reach conclusions.

## Literature Review

The field of prehistoric research in Sri Lanka claims a history of over 125 years. When examining this research history, it appears to have evolved through two phases: initial discoveries in the colonial era and scientific approaches in the post-colonial era.

Considering early research, the contribution of the Sarasin brothers (Paul and Fritz Sarasin) in the 1880s is extremely important. Through research conducted in caves in the southern and central highlands, they presented the opinion that the Stone Age man of Sri Lanka was the ancestor of the 'Vedda' (Deraniyagala, 1992). However, these early ideologies were based merely on superficial observations.

A more formal and scientific study of Sri Lanka's prehistoric man begins with the intervention of Dr. P.E.P. Deraniyagala. Following excavations in the Ratnapura and Balangoda areas, he named the Mesolithic man who lived in this country *Homo sapiens balangodensis* (Balangoda Man) (Deraniyagala, 1958). This classification he presented, is still accepted internationally today.

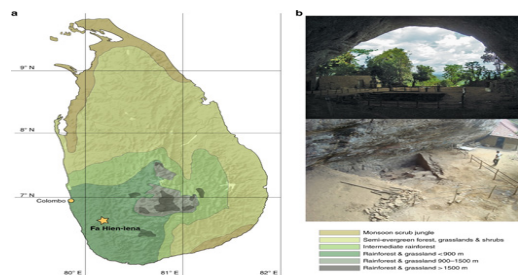
Subsequently, after the 1960s, the introduction of modern stratigraphic excavation methods and the use of Radiometric dating by Dr. Siran Deraniyagala marked a turning point in the country's archaeology. His work "The Prehistory of Sri Lanka: An Ecological Perspective" (1992) analyzes human activities in association with the Iranamadu soil complex and wet zone caves from an ecological perspective.

Examining recent literature, studies conducted by Dr. Nimal Perera and researchers from the University of Cambridge have revealed that the use of microliths in South Asia is reported from Sri Lanka as early as 45,000 years ago (Perera et al., 2011). Wedage et al. (2019) and Sumangala. (2016) point out that the Balangoda Man in Sri Lanka is the oldest *Homo sapiens* group in the world to have lived long-term by successfully adapting to a Tropical Rainforest environment. This is a powerful discovery that challenges the traditional view that "humans were limited only to savannah lands."

Bio-archaeological studies conducted by Kennedy et al. (1987) have analyzed the dental and skeletal structure of Balangoda Man, confirming that they exhibited physical features distinct from other prehistoric populations in the South Asian region.

## Results

By analyzing the archaeological evidence obtained from sites such as Fa Hien-lena, Batadombalena, Kitulgala Belilena, and Bellanbandi Palassa for this research, the following results could be identified.



(Figure 01)

Specialized rainforest hunting by *Homo*

sapiens ~45,000 years ago

(<https://www.nature.com/articles/s41467-019-08623-1>)

Dating and Settlement According to Carbon 14 (C14) and Thermoluminescence (TL) dating data, the oldest human skeletal remains found in Fa Hien-lena cave belong to a period 48,000 years ago (BP) (Perera, 2010). Evidence from 28,000 years ago has been found at Batadombalena, and Mesolithic evidence from 13,000 years ago has been found at the Bellanbandi Palassa open-air site. This confirms that continuous human settlement existed in Sri Lanka from the late Pleistocene era.

According to skeletal measurements of Balangoda Man, the average height of a male was approximately 174 cm, and the height of a female was approximately 166 cm (Kennedy, 2000). Their skulls were thick, and they possessed wide jaws and large teeth (Megadont). Examination of dental wear patterns reveals that they consumed a diet rich in coarse and fibrous foods.

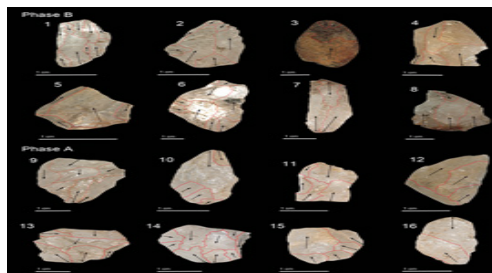


(Figure 02)

Human skeleton from Fa Hien Lena

(<https://archive.roar.media/english/life/history/the-life-and-times-of-balangoda-man>)

Technology and Tool Usage: Geometric Microliths have been found in every major cave. These are small tools, ranging from 1-2 cm in size, and are mostly made using Quartz and Chert rocks. In addition, bone tools—for example, points and scrapers—have been found in abundance (Deraniyagala, 1992).



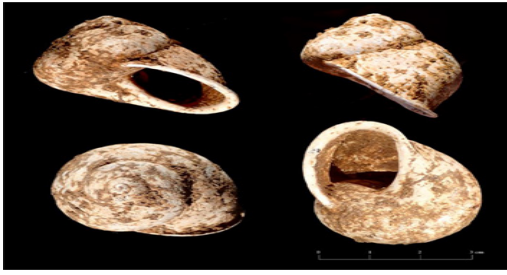
(Figure 03)

Microlithic tools

(<https://journals.plos.org/plosone/article/figures?id=10.1371/journal.pone.0222606>)

Dietary Patterns: In the analysis of faunal remains found from excavations, it appears that a large percentage of their diet consisted of small animals. Burnt bone fragments of animals such as tree snails (*Acavus* sp.), giant squirrels, monkeys, and wild boars have been found in abundance (Karunaratne & Adikari, 1994; Sumangala, 2016). Additionally, macrobotanical remains bear witness to the consumption of wild vegetables, yams, and nuts (*Canarium zeylanicum*).





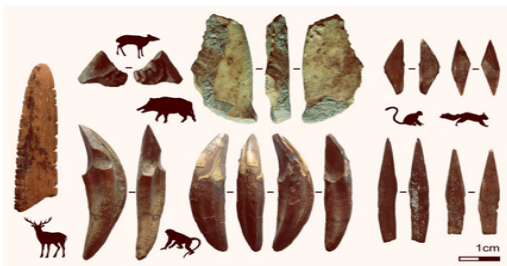
(Figure 03)

*Acavus* sp.

(<https://link.springer.com/article/10.1007/s41826-024-00086-8>)

## Discussion

The most important fact that emerges when analyzing the results is the high degree of adaptation shown by the prehistoric humans of Sri Lanka to environmental changes. Even under conditions of glacial melting and cool climates (Last Glacial Maximum) that occurred in the late Pleistocene, Balangoda Man secured their existence within the wet zone rainforests. This is globally significant because, during that era, many human groups preferred open savannah lands and considered hunting in dense forests a difficult task. However, as pointed out by Wedage (2019), the Sri Lankan human was able to hunt fast-moving arboreal animals using complex technology similar to bow and arrow technology (Sumangala et al., 2025a; Sumangala, 2024).



(Figure 04) arrow technology

([https://www.sci.news/archaeology/fa-hien-lena-arrowheads-08535.html#google\\_vignette](https://www.sci.news/archaeology/fa-hien-lena-arrowheads-08535.html#google_vignette))

When compared with other regions in South Asia, the antiquity of Sri Lanka's microlithic tool technology (45,000 years BP) is outstanding. In India, such technology is commonly found only about 25,000 years later. This implies that Sri Lanka was not merely a shelter for migrants from India, but a center where independent technological innovation (Local innovation) took place.

Furthermore, evidence of funeral rituals found at Fa Hien-lena and Batadombalena reflects their complex social thinking. It can be surmised that by applying Ochre on the bodies of deceased individuals, they held a concept regarding an afterlife or spiritual bond (Deraniyagala, 2007; Sumangala, 2016). When comparing these rituals with those of the modern Veddas, certain similarities are shown, indicating a bio-cultural continuity.



(Figures 05, 06)

evidence of funeral rituals

(<https://www.researchgate.net/figure/Fa-Hien-lena-burial>)

Kennedy (Hawkey, 1998) points out that the dental health of Balangoda Man

was at a very high level. The reduction in dental diseases (Caries) compared to humans of the agricultural era shows that their natural diet was healthy. However, severely worn teeth indicate that food processing technology was still at a primitive level or that teeth were used as tools.

Taken as a whole, this study confirms that the prehistoric human of Sri Lanka was a human group that built a unique bio-cultural identity in the South Asian region, was highly sensitive to the environment, and was technologically advanced.

## Conclusion

Through this archaeological study, several important conclusions can be reached regarding humans of the prehistoric era in Sri Lanka. First, the Mesolithic man of Sri Lanka, or Balangoda Man, is strong evidence confirming the oldest and most continuous settlement of modern humans (*Homo sapiens*) in South Asia. Their complex tool technology and ability to adapt to the rainforest environment from 48,000 years ago clearly demonstrate their intellectual development. Second, the biological relationship existing between the physiological features of Balangoda Man and the modern Vedda people confirms the continuity in Sri Lanka's population history. Burnt bones and plant remains bear witness that their dietary pattern was one that went beyond mere subsistence and possessed an understanding of nutritional value.

Finally, this research suggests that Sri Lanka functioned not merely as a

geographical extension of the Indian subcontinent but as a distinct cultural and technological zone during the prehistoric era. In future research, by conducting further DNA (Ancient DNA) analyses regarding these human skeletal remains, it will be possible to more accurately verify their genetic origin and Sri Lanka's place within the global human migration pattern (Out of Africa theory).

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