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Ornaments of Microlithic Period in Sri Lanka: Based on Cultural Deposit in Rock Shelters

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Abstract

Cultural objects composed of composite materials with differing physical properties are often differentially preserved in archaeological records favoring those materials less susceptible to taphonomic processes. Using microscopically observed wear patterns to decipher a model of socioeconomic roles for composite beaded objects, this study examines the rich ornaments (shell and others) bead assemblage excavated from microlithic periods of rockshelters. Here, I present my findings from the reinvestigation rockshelter sites. Analyses of ornaments (shell and vertebrate) remains from the rockshelter show that this early human presence is associated with rainforest foraging. Traces of marine shell beads and other objects from a 35 - 80 km-distant shore, and, possibly burials reflect symbolic practices from the outset of human presence at the rockshelter.

Key Words: Ornaments, Rockshelter, Microlithic, Holocene, Pleistocene, Shell

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Introduction

The prehistory of Sri Lanka, spanning from the Palaeolithic through the Mesolithic periods, provides significant evidence of early human creativity and symbolic behavior. Among the most fascinating discoveries are ornaments, which not only served decorative purposes but also reflected the social, cultural, and spiritual life of prehistoric communities. Excavations at major prehistoric cave sites such as Fahien-lena, Batadomba-lena, Kithulgala Beli-lena, Kebella-lena and Bellan-bandi Palassa have yielded numerous examples of ornaments made from a variety of natural materials (Deraniyagala, 1992; Wijeyapala, 1997; Perera, 2010).

Prehistoric people fashioned ornaments from marine shells, fish bones, animal teeth and colored stones, often perforating or polishing them to be worn as beads, pendants, or necklaces. Some ornaments were created using exotic materials like marine shells found far inland, suggesting the existence of exchange networks or long-distance movement. These artifacts demonstrate not only the aesthetic sensibilities of early humans but also their ability to manipulate natural resources for symbolic expression (Perera, 2010).

The presence of ornaments in burial contexts points to their ritual significance, possibly linked to beliefs in life after death or as markers of identity and status within the community. Moreover, the production of ornaments highlights the development of cognitive skills, artistic sense, and cultural symbolism during the Late Pleistocene to mid Holocene periods in Sri Lanka. Thus, prehistoric ornaments stand as crucial evidence for understanding the emergence of symbolic culture on the island, bridging the gap between survival-based activities and the beginnings of art, ritual, and social complexity.

Methodology

The study of prehistoric ornaments in Sri Lanka is based on archaeological excavation, analysis, and interpretation carried out at major prehistoric cave sites such as Fahien-lena, Batadomba-lena, Kithulgala Beli-lena, and Kebella-lena. Excavations are conducted using stratigraphic methods to carefully recover cultural layers, ensuring that ornaments are documented within their proper chronological and environmental contexts. Recovered artifacts are then subjected to typological and technological analysis, where characteristics such as raw material, manufacturing technique, size, shape, and signs of wear are examined (Perera, 2010). Techniques like microscopic analysis are used to identify traces of drilling, polishing, and stringing, which reveal how ornaments were made and used (Deraniyagala, 1992; Wijeyapala, 1997).

Where possible, ornaments are studied in relation to associated finds such as stone tools, faunal remains, or burial contexts, allowing for a broader understanding of their symbolic, social, and ritual significance. Some materials, such as marine shells found inland, are further analyzed through provenance studies to

identify trade networks or long-distance resource acquisition. Ornaments are dated using radiocarbon dating of associated organic layers, placing them within a secure chronological framework of the Late Pleistocene to mid Holocene periods. Comparative studies with ornaments from other South and Southeast Asian prehistoric sites also help situate Sri Lankan finds within a wider regional context.

Results

Ornament items are unique artefacts in Sri Lanka, and very few accounts are reported in prehistorical sites. Marine shells had been brought to the site from the coast which is some 30 km distant from Kebella-lena (Sumangala et al., 2025). The presence of a single marine mollusc shell bead and a bead made from a shark vertebra from context 9 provides clear evidence of symbolic practices from the Early Holocene occupation of the site (Figure 3). Furthermore, a single shark tooth with a drilled hole was reported from Phase III of Kebella-lena, dated to approximately 13,163 years BP (Figure 4) (Sumangala et al., 2025). According to morphologies, it belongs to the Carcharhinidae family. The presence of a single marine mollusc shell bead and a bead made possible from a shark vertebra from context 9 provides further evidence of symbolic links to landscapes beyond the immediate rainforest at the site (Perera, 2010). Furthermore, one marine shell ornamental artifacts have been reported in Fahien-lena in the 2023 excavation season.

Further mentions specimens of marine shell from his excavation, although none appear to have been fashioned into ornaments, as well as some evidence of Acavus snails with perforations through the body-whorl. The hole with three Acavus shells were reported from Fahien-lena, and these holes seem to have been designed for some purpose (2023 excavation) (Figure 1, 2). The hole with 6 Acavus snails have been reported from Kuragala, which are dated on 1 from Terminal Pleistocene, 3 from Early Holocene, 2 from Mid Holocene and perforated crocodile tooth from Early Holocene which is called prehistoric pendant. Furthermore, thirty-three conus and Nassarius shell beads were discovered from Kuragala-lena. Eleven of these are made on the apex of Conus shells, the removal of just this part requiring either the collection of beach-abraded specimens or the careful reduction of the shell from the opposing extremity through flaking and/or grinding. Unluckily, the wear on the few conus shell beads is such that it is impossible to determine if the bead was constructed through flaking/grinding or if it was made naturally.

And also, in 1988 excavation, a shark's tooth was recovered from layer 1 at Fahien-lena (Wijeyapala, 1997), which is unfortunately disturbed but may be Late Pleistocene. In 2009, 2010 and 2012 excavations of Fahien-lena, evidence for symbolic/ornaments include three marine shell beads: two made from the apex of Conus spp. and one from a mud snail (Nassariidae) (Langley et al., 2020) (Figure 6, 7). Each displays a single perforation and

extensive wear (rounding, polishing, and key-holing) from use (Langley et al., 2020). This rounding and polish is so extensive that all signs of flaking and/or grinding from the reduction of the shell into a disc form are completely absent. The preference for white, bright, shiny, and round qualities in the shells selected for beads is therefore similar at this Sri Lankan site to what is observed at other Homo sapiens sites of similar age (F. d'Errico et al., 2005). Given that stable carbon and oxygen isotope information from human tooth enamel at the nearby site of Batadomba-lena implies year-round tropical forest foraging, trading between groups focusing on different ecologies seems more probable (Roberts et al., 2015; 2017).

The oldest at Batadomba-lena is a bead of marine shell from Layer 7c dated to 27,000-37,000 cal. years ago, and perforated shells from layer 5, shell bead from layer 6, stingray spine from layer 7a have been reported (Figure 8) (Deraniyagala, 1992: 691; Perera, 2010: 366). The bead not only indicates personal ornamentation in Sri Lanka from a very early period but also indicates contact with the coast. The nearest coastal area to Batadomba-lena is Sri Lanka's south coast, which lies some 50 km away. The distance by foot would have been much greater in Sri Lanka's rugged terrain, and it would be reasonable to assume that the marine shell bead had reached Batadomba-lena through several linked exchanges.

One hole with a shark tooth, one hole with 2 marine shells and 1 hole with a shell bead were documented from the Pothgul-lena, which is dated to Terminal Pleistocene (Figure 5). These data for contact between the coast and the wet zone communities in all low-land wet zone and intermediate zone rock shelters, such as, Batadomba-lena 37,000 cal. BP (Perera, 2010), Kithulgala Beli-lena 18,000 cal. BP (Wijeyapala, 1997; Wedage et al., 2020), Fahien-lena 48,000 cal. BP (Wijeyapala, 1997; Langley et al., 2020), Kuragala-lena 15,163 cal. BP (Eregama, 2022) and Pothgul-lena 14,000 cal. BP (Adikari and Manamendra, 2012), here takes on a very practical guise, given the value of imported salt in providing sodium chloride and iodine to communities in iodine-deficient areas. In Kithulgala Beli-lena, much later evidence of contact with the coast appears in the guise of a shark's tooth from Layer VII-a-2, dated to ca. 4 ka (Wijeyapala, 1997). A shell of the marine gastropod Potamides cingulatus was found in Layer III-c-1) which dates to ca. 21 ka.

Wijeyapala (1997: 320) further mentions specimens of marine molluscs from his excavation, although none appear to have been fashioned into ornaments, as well as some evidence of Acavus snails with perforations through the body-whorl. During 2005, a tooth from a pig shark was excavated in context 10 in Bellan-bandi Palassa, dated to approximately 12,000 BP, which appears to have been used as an ornament. The ethnography on the Veddas collected by the Sarasins and the Seligmanns indicate that, at around 1900, neither men nor women tattooed or painted themselves, or wore ornaments of any kind (Sarasin 1939: 143; Seligmann and Seligmann 1911: 205, 207). However, in earlier times

women are remembered to have worn necklaces of shell (Lewis 1911: 125) and bone marrow was apparently used as an ointment on hair and skin (Nevill 1887: 189). Of more relevance are the indications of symbolic behaviour in archaeological sites dating to around the same time as the early occupation of Sri Lanka by anatomically modem Homo sapiens.

The excavations of Terminal Pleistocene and Holocene sites have also yielded many excellently preserved tropical rainforest land snails (Oligospira and Acavus). These snails are well known for their pleasing color and attractiveness. Some of the shells appear to have been used for making pendants or necklaces, by executing a perforation in the center of the body whorl, allowing the shells to be suspended or strung together. According to my experience in Thailand, explanation for these holes is the use of the shells as ornaments, for which there are ethnographic analogies in Ban Kao village (Thailand). Jude Perera, (retired officer from Department of Archaeology in Sri Lanka), who identified the land snail, also observed cases of apparent artificial holes in the surface of the shells.

Figure 1: Ornaments manufactured from shell fragment recovered in the Fahien-lena; One hole with Acavus shell.

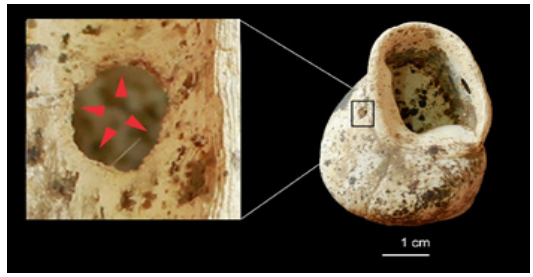

Figure 2: Shell bead from Fahien-lena (2023): rounding of drilled hole marks in Acavus shell bead

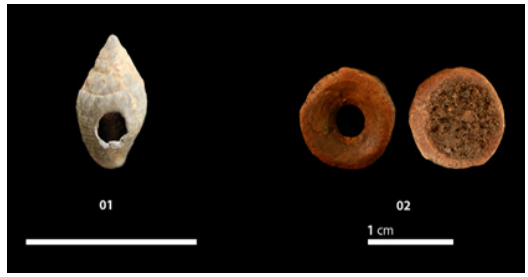

Figure 3: Ornaments manufactured (bead) from shell (1) and shark vertebra (2) elements recovered in the Kebella-lena

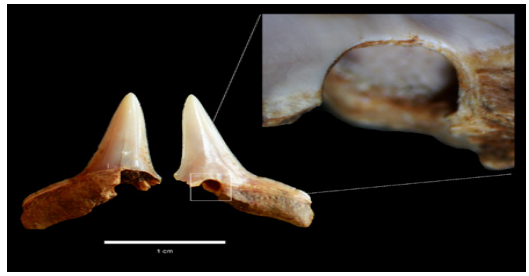

Figure 4: – Shark tooth, visual characteristic – drilled with hole mark. Based on evidence of hole marks, this tooth may be used to pendant. The recovery of a shark's tooth, it would signify contact with coastal populations rather than a marine component to the diet (Sumangala et al., 2025).

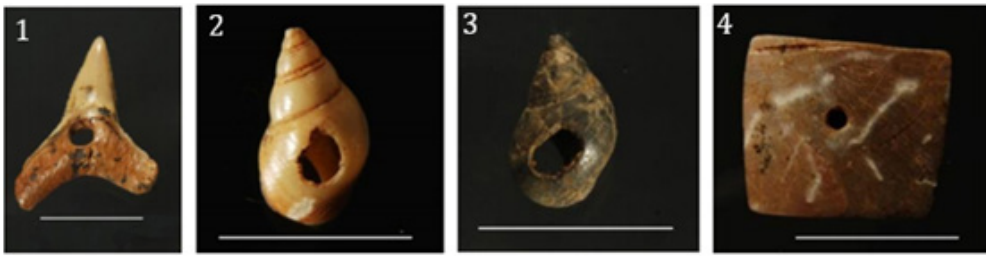

Figure 5: Ornaments manufactured from faunal elements recovered in the Pothgu-lena; 1). shark tooth pendent, 2 and 3). Nassarius shells bead and 4). Disc bead

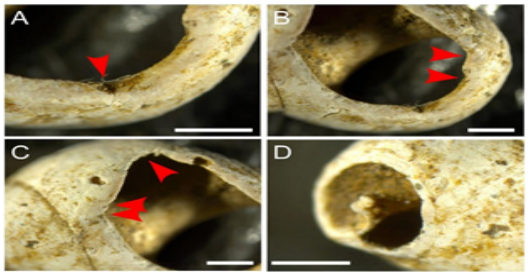

Figure 6: Nassarius bead 188 from Phase C (13-12 kya). Red arrows indicate (A) notch; (B & C) notching and rounding (Langley et al., 2020)

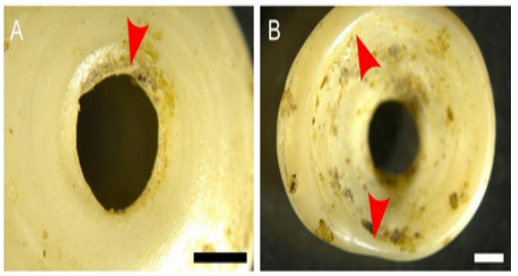

Figure 7: Conus bead 189 from Phase D (45-34 kya). Red arrows indicate (A) notching and rounding; and (B) rounding and polish (Langley et al., 2020)

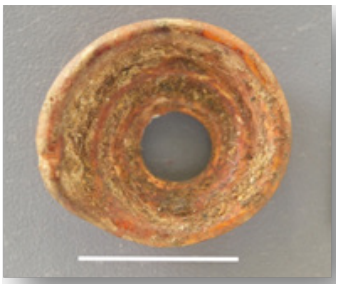

Figure 8: Batadomba-lena: marine shell bead from layer 7c; 37,000-32,000 cal BP (scale 1 cm) (Perera, 2010)

Discussion

I also presented the high-resolution analysis of symbolic material culture from the Late Pleistocene to Holocene sites in tropical Sri Lanka. Microscopic analysis has shown that Homo sapiens populations in this part of the world, as those recorded in Africa and Eurasia during this same period, continued to value marine shell beads for social signaling practices. The marine faunal remains, which were then elaborated, also highlight the significance of exchange networks between populations on different parts of the island. The presence of chert in stone tool assemblage indicates the import of raw material from non-local settings through the distance of transport here remains to be resolved. One shark tooth, vertebra bead and shell bead were found

at Kebella-lena, one shell bead was found from Fahien-lena, shark tooth and shell bead were found at Pothgul-lena and more shell beads were found at Kuragala-lena; this kind of artifacts is common as Homo sapiens's personal ornaments. They include evidence of marine artifacts documented in the Holocene and Terminal Pleistocene phases of Kebella-lena, Fahien-lena, Batadomba-lena, Kithulgala Beli-lena and Alawala Pothgul-lena (Deraniyagala 1992; Wijeyapala, 1997; Perera, 2010; Perera et al., 2011; Langley et al., 2020; Wedage et al., 2020; Sumangala et al., 2025), in addition to the intermediate zone from Kuragala (Eregama, 2022) and dry zone from Bellanbandi-Palassa (Perera, 2010). Alongside later Terminal Pleistocene evidence for shark teeth and marine shell beads at Kebella-lena, Fahien-lena, Kuragala and Pothgul-lena, this initial finding implies the development of long-distance trading networks between populations exploiting the interior rainforests and groups located on the coast. The above-mentioned shell beads technologies share a number of commonalities with that recovered from the similarly aged Liang Jon in East Kalimantan, Borneo (11,938 and 10,515 cal. BP and 4,975–4,620 cal. BP). The use of marine shells for ornamentation purposes is demonstrated for Homo sapiens in the Middle and Later Stone Ages of Africa from 100 ka cal. BP (Henshilwood and Dubreuil, 2011), from 45 ka cal. BP in Eurasia (Vanhaeren and d'Errico, 2006), and from 45 ka cal. BP in Island Southeast Asia (Brumm et al., 2017). Another southern African site, Diepkloof, has produced fragments of water containers, made of ostrich shell, with similar geometric designs, dated to ca. 75 and 60 ka. Carefully shaped and perforated beads of ostrich shell have not only been recovered from southern African sites of the same antiquity (Mellars 2006: 798) but also from Patne and Jwalapuram, in India (Sankalia 1974: 226-8; James and Petraglia 2005), where they are of around the same age as the earliest beads from Batadomba-lena. Mellars (2006) would appear to have a strong case in associating the appearance of symbolic behaviour along the rim of the Indian Ocean, whose earliest dates occur in Sub-Saharan Africa, with the eastward dispersal of anatomically modem Homo sapiens.

The presence of marine artifacts assemblage indicates the import of raw material from non-local settings through the distance of transport here remains to be resolved. Clearer evidence for some connectivity with other landscapes are apparent in the presence of marine resources in the form of shark teeth and marine shell beads, indicating at least indirect interaction with the island's coast. Such a network between different groups, potentially operating simultaneously, is also supported by growing data for contact between hunting communities in the rainforest and coast. Hunting groups in the tropical rainforest have been linked with coastal area communities, which may be complete requirements. Consequently, it appears that the low-land wet zone tropical rainforest environments were home to an established population

that was part of symbolic and social networks with communities inhabiting other Sri Lankan biomes, not only on the coast but potentially also in the drier south-eastern and north reaches given the lack of Pleistocene and Holocene investigation of these regions to-date (Deraniyagala, 1992; Roberts et al., 2015). The sea coast is just 35 km far from the wet zone where the caves are located, and the discovery of these marine artifacts could suggest direct or indirect with groups living near the coast. It seems that different populations living on the coast, and perhaps within the rainforest, communicated with each other and exchanged symbolic material culture, potentially in order to buffer risk in both environments or to keep social relationships harmonious amongst rapidly growing populations across the island, as elsewhere in South Asai. The diverse multidisciplinary datasets reported here have also provided more in-depth understanding of the plant and animal resources targeted by rainforest foragers in Terminal Pleistocene to Holocene Sri Lanka than ever before. Moreover, it is clear that human hunters in Sri Lanka had intimate ecological knowledge of their prey, monitoring age profiles and species in order to sustainably obtain protein resources into the Late Holocene (Wedage et al., 2019). Supplemented with identified economic plants (e.g. Canarium sp., breadfruit), this reveals a rich profile of specialized rainforest foraging.

The adaptive strategies exhibited by Pleistocene to Holocene human groups in Sri Lanka's wet zone rock shelters demonstrate the complexity of their survival in tropical rainforest environments. These shelters preserve important evidence of symbolic, technological and economic behaviour that is rarely paralleled in South Asia, particularly in the preservation of organic materials such as bone tools and bone/shell artifacts.

Conclusion

The discovery of prehistoric ornaments in Sri Lanka highlights the creativity, symbolic thinking, and cultural sophistication of the island's earliest inhabitants. Far from being concerned only with survival, these communities invested time and effort into crafting items of beauty and meaning from shells, bones, teeth and stones. Such ornaments not only served as personal adornments but also functioned as markers of identity, social status, and ritual belief systems. Their presence in both habitation and burial contexts demonstrates that prehistoric Sri Lankans valued symbolic expression as an integral part of life. Moreover, the use of exotic materials like marine shells found inland suggests trade networks or long-distance mobility, showing that these communities were interconnected and resourceful. Ultimately, prehistoric ornaments of Sri Lanka stand as enduring testimony to the early development of art, symbolism, and human expression, providing a vital link between the island's ancient past and the cultural traditions that evolved in later periods.

References

Adhikari, G and Manamendra, K. 2012. Prehistory of Alawala Potgul-lena (Cave). Dr. P.E.P Deraniyagala memorial Paleo biodiversity conference, Ministry of Environmental Department, Central Cultural Fund, PGIAR – University of Kelaniya.

Deraniyagala, S.U. 1992. The Prehistory of Sri Lanka: an Ecological Perspective. 2nd ed. Colombo: Department of Archaeology.

Deraniyagala, P.E.P. 1955. A coloured atlas of some vertebrates from Ceylon. (3): serpentoid reptiles. National Mus. Ceylon., Colombo. vii+107, pp. 21.

Deraniyagala, S.U. 2007. The prehistory and protohistory of Sri Lanka. In Prematilleke, P.L., Bandaranayake, S. Deraniyagala, S.U., Silva, R. (eds.). The Art and Archaeology of Sri Lanka vol. 1: 1-96. Colombo: Central Cultural Fund.

Eregama, H.M.S. 2022. Archaeological Evidence from the Kuragala Site, Sri Lanka. Ancient Lanka. Volume 1 (2022) 1-23: Siran Deraniyagala Commemoration Volume. https://doi.org/10.29173/anlk647.

F. d'Errico, C. Henshilwood, M. Vanhaeren, K. van Niekerk. 2005. Nassarius kraussianus shell beads from Blombos Cave: Evidence for symbolic behaviour in the Middle Stone Age. J. Hum. Evol. 48, 3–24.

Henshilwood, C.S., Dubreuil, B. 2011. The Still Bay and Howiesons Poort, 77-59 ka: Symbolic material culture and the evolution of the mind during the African Middle Stone Age. Curr. Anthropol. 52, 361–400.

James, H.V.A and Petraglia, M. 2005. Modern Human Origins and the Evolution of Behavior in the Later Pleistocene Record of South Asia. Vol. 46, pp. S3-S27. The University of Chicago Press.

Kennedy, K.A.R. and Deraniyagala, S.U. 1989. Fossil remains of 28,000-year-old hominids from Sri Lanka. Current Anthropology 30: pp. 394-99.

Langley, M., Amano, N., Wedage, O., Deraniyagala, S., Pathmalal, M.M., Perera, N., Boivin, N., Petraglia, M., Roberts, P. 2020. Bows and arrows and complex symbolic displays 48,000 years ago in the South Asian tropics. Sci. Adv. 6, eaba3831. doi:10.1126/sciadv.aba3831.

Lewis, F. 1911. Note on animal and plant life in the Vedda county. Spolia Zeylanica 10: 119-65.

Nevill, H. 1887. Veddas of Ceylon. Taprobanian 1: 175-97.

Mellars, Paul. 2006. Going east: new genetic and archaeological perspectives on the modem human colonization of Eurasia. Science 313: pp. 796-800.

Perera, N. 2014. Prehistoric Sri Lanka. Royal Asiatic Society of Sri Lanka, Colombo, Volume 59, Part 2.

Perera, N., Kourampas, N., Simpson, I.A, Deraniyagala, S.U., Bulbeck, D., Kamminga, J., Perera, J., Fuller, D.Q., Szabó, K., Oliveira, N.V. 2011. People of the ancient rainforest: Late Pleistocene foragers at the Batadomba-lena rockshelter, Sri Lanka. Journal of Human Evolution, 61, 252–269.

Perera, H.N. 2010. Prehistoric Sri Lanka: Late Pleistocene Rockshelters and an Open-air Site. Oxford: Archaeopress.

Perera N., 2015. The Importance of Sri Lanka Wet Zone Rock Shelters. In Rev Pathaberiye Chanaloka and Naml Kodithuwakku (eds), One hundred and twenty-five years of the Department of Archaeology in Sri Lanka. Colombo 07. p. 105 – 107

Roberts, P., N. Perera, O. Wedage, S. Deraniyagala, J. Perera, S. Eregama, A. Gledhill, M. D. Petraglia, J. A. Lee-Thorp. 2015. Direct evidence for human rainforest resource reliance in Late Pleistocene Sri Lanka. Science 347, 1246–1249.

Roberts, P., N. Perera, O. Wedage, S.

Deraniyagala, J. Perera, S. Eregama, M. D. Petraglia, J. A. Lee-Thorp. 2017. Fruits of the forest: Human stable isotope ecology and rainforest adaptations in Late Pleistocene and Holocene (~ 36 to 3 ka) Sri Lanka. J. Hum. Evol. 106, 102–118.

Sankalia, H.D. 1974. Prehistory and Protohistory of India and Pakistan. Puna: Deccan College.

Sarasin, Fritz. 1939. Reisen und Forschungen in Ceylon in den Jahren 1883-1886, 1890, 1902, 1907 und 1925. Basel: Verlag von Helbing & Lichtenhahn

Seligmann, C.G and B.Z. Seligmann. 1911. The Veddas. Cambridge University Press

Stock, J. T, Emma Pomeroy, Oshan Wedage, Saman Eregama, Siran Deraniyagala, Nimal Perera, Patrick Roberts, Nicole Boivin, Michael Petraglia. 2022. Early Holocene Human Burials from Fahien-lena and Kuragala, Sri Lanka. Ancient Lanka, Volume 1: Siran Deraniyagala Commemoration Volume.

Sumangala. P., Perera, N., Premathilake, R., Perera, J., Uparathana, U., Jinarathana, K., Wimalakhanthi, G., Hu, Y., Lu, H. 2025. Terminal Pleistocene to mid-Holocene rainforest foragers in Sri Lanka: Multidisciplinary insights at Kebella-lena rock shelter. Quaternary Science Reviews. 351 (2025) 109201.

Vanhaeren, M., F. d'Errico, F. 2006. Aurignacian ethno-linguistic geography of Europe revealed by personal ornaments. J. Archaeol. Sci. 33, 1105–1128.

Wedage, O., Amano, N., Langley, M.C., Douka, K., Blinkhorn, J.,Crowther, A., Deraniyagala, S.U., Kourampas, N., Simpson, I., Perera, N., Picin, A., Boivin, N., Petraglia, M & Roberts, P. 2019. Specialized rainforest hunting by Homo sapiens ~45,000 years ago, NATURE COMMUNICATIONS| https://doi.org/10.1038/s41467-019-08623-1.

Wedage, O., Roberts, P., Faulkner, P., Crowther, A., Douka, K., Picin, A., Blinkhorn, J., Deraniyagala, S.U., Boivin, N., Petraglia, M., Amano, N. 2020. Late Pleistocene to Early-Holocene Rainforest Foraging in Sri Lanka: Multidisciplinary analysis at Kitulgala Beli-lena. Quaternary Science Reviews 231, https://doi.org/10.1016/j.quascirev.2020.106200 0277-3791.

Wijeyapala, W. H. 1997. New Light on the Prehistory of Sri Lanka in the Context of Recent Investigations at Cave Sites. Sri Lanka: University of Peradeniya, Sri Lanka.