International Journal of Current Research and Applied Studies, (IJCRAS)

ISSN: 2583-6781

available at https://ijcras.com/

Volume 5 Issue 2 March-April 2026, Page 24-30

To cite this article: Pahiyangala Sumangala (2026). FLOOR STONE TILE OF THE TERMINAL PLEISTOCENE DEPOSIT IN THE KEBELLA-LENA ROCKSHELTER OF SRI LANKA, International Journal of Current Research and Applied Studies (IJCRAS) 5 (2): Article No. 141, Sub Id 249

FLOOR STONE TILE OF THE TERMINAL PLEISTOCENE DEPOSIT IN THE KEBELLA-LENA ROCKSHELTER OF SRI LANKA

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DOI : https://doi.org/10.61646/IJCRAS.vol.5.issue2.141

ABSTRACT

Archaeological investigations at the Kebella-lena rockshelter in Sri Lanka have revealed a significant floor stone tile associated with a Terminal Pleistocene depositional context. This feature represents an important example of intentional spatial organization within a prehistoric habitation site. The stone tile, carefully arranged as part of the living surface, suggests deliberate modification of the rockshelter floor to create a stable and functional area for human activity. Its presence indicates an advanced understanding of space management and site maintenance among Late Pleistocene hunter-gatherer communities.

Keywords: Stone tile, Rockshelter, Terminal Pleistocene, Sri Lanka, Stone tools

INTRODUCTION

This type of stone tile floor was revealed for the first time in a small rock shelter prehistorical site of Sri Lanka, and it has been dated 12 ka to 13 ka cal. BP (Sumangala et al., 2025). The large number of stone artifacts found in this rock shelter indicates that the *Homo sapiens* may have made floor stone tile for ease of making stone tools. Four large stone fragments were discovered here and if fully excavated, it would have been possible to find the entire floor stone tile. Stone artifacts were widely scattered on this floor

stone tile.

The floor stone tile was recovered from securely stratified deposits dated to the Terminal Pleistocene, providing reliable chronological placement for this architectural element. Associated archaeological materials, including stone tools, faunal remains, and occupation debris, support the interpretation of sustained human use of the rockshelter during this period. The construction of a prepared stone floor may have served multiple purposes, such as improving comfort, cleanliness, and durability of the living surface, particularly in a humid tropical environment.

This discovery contributes new insights into behavioral complexity and technological adaptation among prehistoric populations in Sri Lanka. The Kebella-lena floor stone tile highlights early evidence of architectural planning and landscape modification, expanding current understanding of Terminal Pleistocene settlement strategies in South Asia.

OBJECTIVE

To document and describe the floor stone tile feature identified within the Terminal Pleistocene deposit of the Kebella-lena rockshelter, source of stones and the technological knowledge involved in creating a prepared living surface, particularly site organization, habitation intensity, and adaptation strategies of Late Pleistocene hunter-gatherers in tropical rainforest environments.

METHODOLOGY

The location of the feature was recorded using grid-based mapping, photography, and scaled drawings. Its position within the rockshelter and relationship to surrounding archaeological features were carefully noted, with hearths or activity areas, and the distribution of artifacts and eco-facts. This helped interpret whether the stone tile floor served as a living surface, working area, or specialized activity zone.

RESULTS AND DISCUSSION

The 2022 excavations at Kebella-lena yielded a collection of 128,741 lithic artefacts, which have been subjected to detailed analysis. The raw material used is almost exclusively quartz, sourced from the immediate vicinity of the site. Quartz pebbles are readily obtainable in nearby streams and watercourses within the Sinharaja rainforest. The occurrence of a greater proportion of quartz as the main raw material, particularly clear quartz (crystal), in the stone assemblage reflects a clear preference for raw material quality. Clear quartz are also found in all major phases of occupation in very high frequency, indicating a pattern of import of flakes and cores into the site. The evidence suggests that intensive reduction activity occurred at the site throughout all occupation phases, from the Terminal Pleistocene to the Mid Holocene. All stone tools production has been represented on stone floor tile.

The core technology clearly documents the presence of bipolar and microblade technology, although the abundance of shatter and debitage (debris) may be indicative of the dominance of the former approach. The present work at Kebella-lena documented the presence of retouched artefacts and debitage in low

numbers, accounting for 174 of approximately 128,741 items in the review assemblage. The assemblage includes predominantly flake tools (scrapers and cutters) and point tools (awls and points) that are less than 8 cm in size. The majority of these tool categories have been produced both bifacially and unifacially. The Kebella-lena stone artefacts are characterized by a preponderance of geometric microlithic artefacts (n=103), including those with microlithic backing, which are primarily of the lunate (n=78) and triangular (n=21) main shaped categories. The entire geometric microlithic assemblage of the Kebella-lena is characterized by a size variation, with a clear dominance of very small sizes (<2 cm).

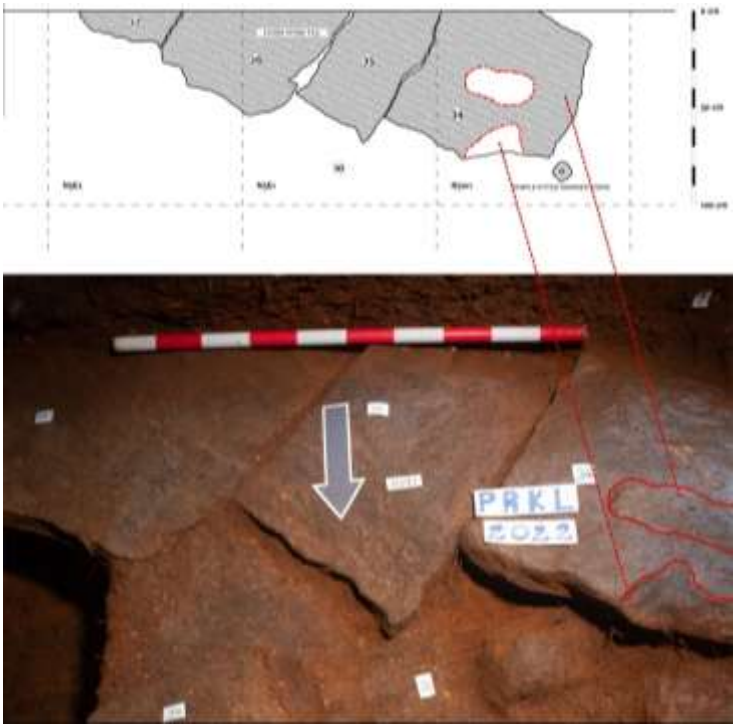

Figure 01. Abrasion marks were noted on the surface of one slab (context 34), suggesting it was used in some capacity.

Clear and milky quartz hammer stones in a very small size (<2 cm) (Figure 7) are reported (with use marks) from Phase IV of Kebella-lena, dated to 7,000 cal. BP. The small hammerstones appear to have been used for producing microliths. Clear pits and abrasions on the stone ends, resulting from repeated percussions, are observable, indicating their use as percussion hammers. Another indirect evidence comes from the micro-retouches observed on numerous tools. These scars display characteristics of hard hammer percussion, such as pounced bulbs, distinct striking points and short extension. However, with ordinary-sized hammers (10-20cm), such precise retouches cannot be achieved. Therefore, we infer that the widely found tools in stone floor tile with these continuous and consistent micro-retouches were knapped using the small hammers. This is the first instance of the discovery of very small geometric microlithic artefacts

(less than 1 cm) at a Sri Lankan rock shelter site. Previous research has documented the presence of high-quality microlithic tools at numerous Late Pleistocene sites, including Batadomba-lena, Kithulgala Beli-lena, and Fahien-lena. However, these sites were entirely absent of very small geometric microlithic tools (Dearniyagala, 1992; Perera, 2010; Wedage et al., 2019).

The Kebella-lena assemblages also include a considerable number of non-flaked tools, such as grindstones, grinders, mortars, and pitted hammer stones. These tools are mainly made of gneiss and a small number of quartz pebbles, mainly of gneiss and occasionally of quartz. These non-flaked tools appear to have been used as pigment grinding or abrading and polishing bone in tool manufacture (Perera, 2010).

In Fahien-lena, which is located near Kebella-lena (approximately 15 km), lithic fragments of Fahien-lena excavations comprised 9,216 artifacts with 4 hammer stones (2012 excavation) (Wedage et al., 2019a), and 816 stone artifacts (2023 excavation) but limited excavated from small rock shelter Kebella-lena, have been documented 128,741 lithic fragments including 54 non-flaked artifacts comprises such as large collection rather than Fahien-lena any excavation season, so my assumption that there must have been stone tools manufacturing as factory side in Kebella-lena at low-land rainforest. Terminal Pleistocene represents one of the most significant occupations of the site, characterized by a high density of stone artefacts, faunal remains, and shell artefacts found across the majority of the habitation area at the site. This reflects the intensive nature of habitation at the site.

The radiometric dating of Terminal Pleistocene yielded a calibrated date range of 12,101 to 13,163 cal. BP, which places it within the Terminal Pleistocene. Terminal Pleistocene represents the earliest dated habitation deposit in the rock shelter, with a thickness of 17 - 08 cm. Habitation in the area excavated in 2022 is represented by a sole occupation deposit (context 10) which is the lowermost occupation deposit. Based on field data and observations, I interpret that when human habitation commenced in the rock shelter, the living floor was likely studded with numerous roof-fall slabs. A particularly large slab of rock (measuring 2.10 m × 80 cm × 18 cm) appears to have fallen from the shelter wall. Cultural remains, including stone artifacts (with nonflaked artifacts) and faunal material found on the surface of this slab (Figure 2), suggest that it was regularly utilized as an occupation surface (322 MSL – Mean Sea level). Interestingly, other roof-fall slabs found in the same layer were not as weathered or rounded as the four slabs (Figure 3). Abrasion marks were noted on the surface of some of these slabs (Figure 1), suggesting they were used in some capacity. However, these marks are not sufficiently clear to conclusively establish specific activity patterns, such as stone artifact production. This interpretation aligns with similar features identified at other Sri Lankan rock shelters, such as the terrace floor at Batadomba-lena and the rubble footing structure at Kithulgala Beli-lena (Deraniyagala, 2007). Both features have been tentatively dated to the Terminal Pleistocene, suggesting a potential chronological parallel with the Kebella-lena slab level.

Figure 2: Cultural remains (stone artefacts, faunal remains, and other materials - after wet sieving) were found on the surface of the stone slab of the E5 E1 pit in excavation.

Figure 3: Roof-fall slabs found in cultural phase III (context 10) were not abraded mark any use mark.

CONCLUSION

The floor stone tile identified within the Terminal Pleistocene deposit of the Kebella-lena rockshelter represents a significant example of intentional site modification by Late Pleistocene hunter-gatherers in Sri Lanka. Stratigraphic evidence confirms that the feature was constructed and used during the Terminal Pleistocene, demonstrating planned spatial organization within the rockshelter. The careful arrangement and selection of stone materials indicate deliberate construction rather than natural deposition. This prepared floor surface likely functioned as a stable living or activity area, facilitating domestic tasks and repeated occupation. Evidence from associated artifacts (especially stone tools) and sediments suggests sustained human presence and organized use of space, reflecting advanced adaptive strategies within a tropical rainforest environment. The Kebella-lena stone tile floor contributes valuable insight into technological innovation and behavioral complexity among prehistoric communities in Sri Lanka. When compared with similar features from other Late Pleistocene sites on the island, it highlights regional patterns of habitation planning and environmental adaptation.

REFERENCES

Deraniyagala SU., 1992. The Prehistory of Sri Lanka: An Ecological Perspective, 2nd ed. Colombo: Department of Archaeology.

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.

Perera, N., 2010. Prehistoric Sri Lanka: Late Pleistocene Rockshelters and an Open-air Site. British Archaeological Reports International Series, Archaeopress, Oxford.

Perera N., 2015. The Important of Sri Lanka Wet Zone Rock Shelters. Archaeological Academic Journal. Department of Archaeology. Colombo. p. 105 – 107

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.

Wedage, O., Picin, A., Blinkhorn, J., Douka, K., Deraniyagala, S.U., Kourampas, N., Perera, N., Simpson, I., Boivin, N., Petraglia, M., Roberts, P., 2019a. Microliths in the South Asian rainforest ~45-4 ka: New insights from Fa-Hien Lena Cave, Sri Lanka. PLOS ONE 1-36 https://doi.org/10.1371/journal.pone.0222606

Wijeyapala, W.H., 1997. New light on the prehistory of Sri Lanka in the context of recent investigations of cave sites. University of Peradeniya, Peradeniya, Sri Lanka.