

GEOARCHAEOLOGY OF RAJAGALA CAVE MONASTERY, EASTERN SRI LANKA

Pathmakumara Jayasingha¹, MDIK. Abeynayake², Gayan Baduraliya³

The Rajagala archaeological site is a Rock Shelter Buddhist monastery constructed during the king Lajjitissa period, (119-109 BC). The entire monastery had been developed on a small hill of a mountain range running Northeast-Southwest direction. The aim of this research was to study the geoarchaeological background of the site. During the field visits, geological background including petrology, pedology and geomorphology were studied based on their physical properties such as types of minerals, texture, and morphological features. In addition, special attention was made to the study of rock quarrying and carving and different developments of rock shelters by measuring the sizes of shelters and wedging holes and the shapes of shelters and wedging holes. The results reveals that the bed rock geology of the entire monastery characterizes with high grade, metamorphosed granitic rocks known as Granitic Gneiss of Vijayan Complex. The monastery consists of more than 100 rock shelters converted to Buddhist meditation centers. Both bed rock shelter and boulder rock shelters are dominant. The quarrying has been done by applying wedge quarrying technique characterized by the oval shape wedging holes specific to Anuradhapura period. The natural rock shelters had been converted to meditation centers, temples with shrine rooms and monk residence. Natural springs appeared at those shelters and had been used to take the cooling effect evidencing for the knowledge of ancient people on the behavior of groundwater and bed rock geology. The developed rock shelters show the curtaining of rainwater by constructing drip ledges and further it is well noted the enlargement of the interior morphology of the shelter by removing some parts of the rocks. Hence the Rajagala archaeological site is the first to be recorded as a place with strongly reshaped rock shelters by humans. The applied plasters to the shelters seem mostly clay and lime and material identification is needed. In conclusion, it can be noted that this ancient built environment resulted by excellent understanding of nature specifically geology and geomorphology.

Keywords: Rajagala Buddhist monastery, Geoarchaeology, Rock shelters, quarrying techniques

¹ Department of Geology, University of Colombo. jpathma@geo.cmb.ac.lk

² Department of History and Archaeology, University of Sri Jayewardenepura.

³ Development officer, Department of Archaeology Sri Lanka, Colombo.