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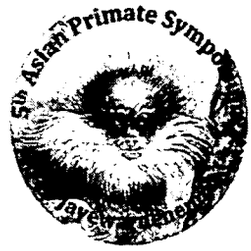


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# Paleoclimatic Change from the Middle Quaternary to Holocene Periods in the Kalu Ganga River Basin, Sri Lanka

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Sri Lanka is a tropical country, which is important to study the weathering erosion, transportation and deposition processescaused by riversand surface running water. According to the geological time scale, these processes were evident during the Quaternary period. Therefore lots of sedimentary deposits are found within the costal lowland and upland regions, and gem bearing minerals are found within the highland complex. These minerals have been deposited island-wide by the process of river erosion and transportation. Especially the Kalu Ganga river basin is prominent for the sedimentation of gem bearing minerals.According to the paleontological evidence in Sri Lanka, there is a stratigraphy of gem-bearing sediments in the Kalu Ganga river basin in terms of the depth of sediments and number of gem-bearing layers. Our research focuses onthe study of this particular stratification pattern in Kalu Ganga river basin. For this purpose, an investigation was carried out in ten gem mines representing the middle catchment of the river basin. Methodology includes GIS mapping, GPS location, sieve analysis, organic content analysis and pipette analysis. There is spatial variation in the number and the depth of gem bearing and non-gem bearing sediment layers in the Kalu Ganga river basin. It is very important to find out that two gem bearing sediment layers belonging to the different geological periods can be found in the middle catchment area.Since the lake sediments were found below the lowest gem bearing sediment layer in the catchment, it is assumed that there was paleontalogical morphology of a lake in the middle of Quaternary period.

***Keywords:*** *gem, sediment layer, deposition, stratigraphy, kalu ganga*