

**ENVIRONMENTAL CHANGES IN THE MIDDLE MALWATU OYA  
BASIN BASED ON THE ARCHAEO-PALYNOLOGICAL EVIDENCE  
FROM JETAVANARAMA SETTLEMENT SITE AT ANURADHAPURA,  
SRI LANKA**

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The Archaeo-palynological evidence provides much information on the influences of palaeo-climatic and anthropogenic activities around the middle *Malwatu Oya* basin, North Central Sri Lanka. The *Jetavanarama*, that is the largest and the tallest brick-built historical Stupa in the World, is one of the main historical settlement sites located on the left bank of the middle part of *Malwatu Oya*. The research excavation, near the western gate of the Stupa was carried out in 2013 with a view of reconstructing the palaeo-environment with emphasis on Palynology as a multidisciplinary exercise. Six samples from the stratigraphy covering eighteen sediment layers have been collected on the basis on their prominent archaeological records. Identification was conducted referring to the basis of available type slide collection at the Department of Botany, University of Peradeniya, Sri Lanka. The identified fossil pollen grains were from Poaceae, Fabaceae, Cyperaceae, Meliaceae, Apiaceae and Fabeceae. Pollen grains from Poaceae, Meliaceae, Apiaceae and Fabeceae found from the layers are comparable to pre-Jetavanarama period while the samples from the two sediment layers are comparable with the post-Jetavanarama period and carry a higher number of pollen from Poaceae, Fabaceae and Cyperaceae suggesting a relative reduction of forest taxa, e.g. Meliaceae. Respective sediment layers provide evidence of the presence of lakes or swamps and occurrence of frequent flood in or in the vicinity of the studied area. Further, there is evidence to prove the presence of habitation sites and some palaeo-environmental differences related to the anthropogenic activities have occurred at the site from during the early historic period to present day. Those transformations were identified through palynological studies and radiocarbon chronology.

*Keywords:* Jetavanaramaya, Pollen, Poaceae, Archaeo-palynology