
Current interdisciplinary approach of the evolution of environment and climate in the Sangiran Dome (Java, Indonesia) during the lower Pleistocene

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Abstract

The Sangiran Dome early man (*Homo erectus*) site's stratigraphy potentially provides a good picture of the succession of palaeoclimatic and palaeoenvironmental changes that occurred in the axial depression of Java Island during the Lower and Middle Pleistocene. A number of programs, including archaeological excavations, deal with the early Middle Pleistocene Kabuh fluvial series, which offer a good and significant documentation in terms of mammalian fauna. However, mammal fossils concentrations are much more difficult to characterize in the Lower Pleistocene clayey series, which recorded the progressive emergence of this part of Central Java, leading to look for other clues in order to reconstruct the ancient environments. We present here the current progress of a multi-proxy approach undertaken in the so-called Kalibeng and Pucangan series along the course of the Puren stream in the Pablengan kampong, which presents one of the best stratigraphical continuity at the local

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scale. Stratigraphical field records allow to precise former data and to pinpoint potential layers of study. Systematic sampling and sieving of sediments leads to retrieve a number of fossils including remains of continental (e.g. rodents) or aquatic fauna (fish and reptilian remains, shells). Undertaken analyses include taxonomy, palaeoecological significance of determined taxa, and also stable isotopic analyses ($\delta^{18}\text{O}$ and $\delta^{13}\text{C}$) whose results are further compared to previous chronological (e.g. palaeomagnetism, macrofauna), micromorphological and pollen analytical published records.

Keywords: Palaeoenvironment, Biostratigraphy, Sangiran Dome, Central Java, Lower Pleistocene