

Dating Trinil: towards establishing an age framework for the hominin-bearing deposits at the *Homo erectus* site Trinil (Indonesia)

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In the 1890s, the anatomist Eugène Dubois found the first fossils of our extinct relative *Homo erectus* at Trinil on Java (Indonesia). Since then, one of the major questions of humankind has been to find out “what made us human”. *H. erectus* was morphologically in many ways like us, and the first hominin species to spread, from about 1.8 Ma onwards, over Africa, Eurasia and Southeast Asia. However, it is still unknown what behavioural and lifestyle characteristics allowed *H. erectus* to achieve this cosmopolitan distribution, and reach the island of Java at ~ 1.5 Ma. Dating of Javanese hominin sites is notoriously difficult, yet crucial to resolve the climatic-environmental backdrop and biogeography of hominin species in the region. At present, there is still a lack of well-constrained ages for the important hominin-bearing Hauptknochenschicht (HK) at Trinil. Moreover, the fossiliferous layers above the HK have not been dated at all. Also, there is a paucity of climatic-environmental data on the HK and overlying layers. This hampers the reconstruction of a climatic-environmental framework with temporal correlations to hominin fossils from Trinil, and placement Trinil layers in the context of Asian hominin biogeography. Here, we report on our pilot fieldwork at Trinil in August 2016, as part of an ongoing collaborative project of the ARKENAS Jakarta (Indonesia) and the Faculty of Archaeology, Leiden University (The Netherlands). We have collected geochronological sediment samples from a number of carefully measured and described stratigraphic sections covering the HK and overlying layers, for the application of three dating methods (OSL, Ar/Ar, paleomagnetism). The aim is to provide a first reliable age model for the hominin-bearing and other fossiliferous layers at Trinil. We will present preliminary fieldwork results and discuss the implications for dispersal of fauna (including hominins).