

Vegetation changes in under semi-arid climate, central Kenya, using opal phytolith analysis

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We aim at clarifying vegetation changes using opal phytolith analysis in Il Polei, Laikipia County, Rift Valley Province, Kenya. The gully erosion has extended in this region and the present vegetation is scattered. Trees mainly consist of *Acacia* spp., whereas herbs consist *Opuntia* spp. and *Sansevieria* spp.. The deposits from surface to approximately 2 meters underground are analyzed at 10 or 20 cm interval. The amount of opal phytolith which represents to vegetation coverage is vastly different characteristics in each depth, the amount of opal phytolith at the middle part is about 6 times as much as the one of the upper and lower parts. The ¹⁴C age of the humic soil in of the middle part of the deposits is modern (IAAA-191131). However, as the age of humic soil at 3 meters underground investigated in adjacent this study sites indicates 1,600 years ago (Otsuki et al., 2016), this vegetation history is estimated to exhibit the term before 2,000 at least. Thus, the coverage of vegetation in this region considerably decreased in present. We will show the specific details of vegetation history and discuss the possibility that people's natural resource contributed the vegetation changes.

Keywords: Kenya, Vegetation change, Opal phytolith analysis