

## Research on late Cenozoic diatomites in Kenyan Great Rift Valley: evolution under the environment analogous to that of the Hadean age

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The East African Rift Valley is now longitudinal grabens bordered by normal faults, which are characterized by the alkaline volcanism with high-alkaline hot springs. Such circumstance is compared with the Hadean Earth that had hot continents just after consolidation of magma ocean. In order to clarify the evolution in the Rift Valley, we surveyed the Pleistocene Munyu wa Gicheru Formation which is situated at 13 km WNW of Nairobi, Kenya. The formation is underlain by the Limuru trachyte (1.96 Ma) and overlain by phonolite (72.4 Ma). This age period corresponds to the early progress of the genus *Homo*. The Munyu wa Gicheru Formation is subdivided into three members, i.e. the Lower, Middle and Upper Members, after Ngecu and Njue (1999).

I have clarified the following characteristics by the field surveys in 2016-2017 and by the microscopic observation of diatoms.

(1) A part of the obsidian breccia is intruded into the diatomite of the Lower Member of the Munyu wa Gicheru Formation in the interfingering mode. (2) Several thin layers of tuff and a pumice layer are intercalated in the Middle Member. (3) Radiation dose measured in the areas of the obsidian breccia (0.50  $\mu\text{Sv/h}$ ) and of the pumice layer (0.44  $\mu\text{Sv/h}$ ) are significantly higher than that in the areas of diatomite (0.14  $\mu\text{Sv/h}$ ). (4) Fossil diatoms are analyzed by using of light and scanning electron microscopes. We have detected genera *Aulacoseira*, *Stephanodiscus*, *Cocconeis*, *Campylodiscus* etc. from the samples collected from the Lower and Middle Members. (5) The number of satellite pores of *Fulcoportula* varies 2 to 3 even within one specimen of *Stephanodiscus*. (6) A *Stephanodiscus* specimen having vermiculate pores was found.

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