Japan Geoscience Union Meeting 2010
(May 23-28 2010 at Makuhari, Chiba, Japan)

ACC022-06 Room: Exibition hall 7 subroom 1 Time: May 28 15:00-15:15

Reconstructions of past flora using DNA analysis from ice core samples on Gregoriev Glacier, Kyrgyz Tienshan

Takahiro Segawa[1*], Takashi Abe[3], Nozomu Takeuchi[4], Hiroshi Kanda[2]

[1]TRIC, [2]National Institute of Polar Research, [3]Nagahama Institute of Bio-Science, [4]chiba university

Analysis of ice cores have often been used as a means to reconstruct past environments. The species composition of the organism such as microorganism and plant in the ice cores could reflect the environmental condition at that time. Thus, organisms in ice cores could be useful to reconstruct past environments. However, analysis of the biological contents in ice cores is still very limited. It is difficult to get ancient molecular DNA, so knowledge of the pale-environments of DNA information still has limited. In this study, we examined DNA from ice core sample (about 5,000 and 10,000 years old) collected on the Gregoriev Glacier, Kyrgyz Tienshan. Genes of plant and microorganism were subjected to PCR amplification and nucleotide sequencing. And meta-genome analysis also analyzed. Our results implied that DNA from preserved organisms could be recovered from the ice core samples, leading reconstructions of past flora. Biological information could be used as an environmental marker for past environmental studies.

Keywords: icecore, glacier biology, past climate reconstruction