

珪藻化石を用いた南極宗谷海岸の沿岸淡水湖における古環境復元

姜 怡辰¹、鹿島 薫¹、瀬戸浩二²、谷 幸則³、井上源喜⁴

¹九州大学大学院理学府地球惑星科学専攻、²島根大学、³静岡県立大学、⁴大妻女子大学

Reconstruction of paleoenvironmental changes at coastal freshwater lakes along the Soya Coast, Antarctica, using fossil diatom assemblages

Ijin Kang¹, Kaoru Kashima¹, Koji Seto², Yukinori Tani³, Genki I. Matsumoto⁴

¹Kyushu University, Graduate School of Sciences, Department of Earth and Planetary Sciences.,

²Shimane Univ., ³Univ. Shizuoka, ⁴Otsu Women's Univ.

This study discussed the environmental change of the coastal freshwater lakes, Lake Oyako-ike in Skarvsnes ice-free area and Lake Maruwanminami-ike in Rundvagshetta ice-free area, along the Soya Coast of East Antarctica. For reconstruction of paleo-environment in both lakes, this study focuses on the results of the fossil diatom analyses using sediment cores (Ok4C-01 from Lake Oyako-ike and Mw4C-1 from Lake Maruwanminami-ike).

The Ok4C-01 core (length 135 cm) from Lake Oyako-ike was divided in 5 zones according to the diatom assemblage changes. In zone 1 (135~127 cm, ca. 2,170-2,050 cal yr BP), high percentage of *Paralia sulcata* imply a coastal environment. In zone 2 (127~90 cm, ca. 2,050-1,500 cal yr BP), mainly marine diatoms are observed, but an existence of euryhaline (from brackish to freshwater) species implies the possibility of freshwater inflows. In zone 3 (90~77 cm, ca. 1,500-1,300 cal yr BP), the increases of freshwater species and brackish species imply a lower salinity environment than a coastal environment. Zone 4 (77~60 cm, ca. 1,300-1,100 cal yr BP) is characterized by an increase of freshwater diatoms and a resting spores of diatom. It suggests that environmental change from marine to freshwater environment. In zone 5 (60 cm~Top, ca. 1,100-220 cal yr BP), dominantly freshwater diatoms are observed. It implies that the environment of Lake Oyako-ike is freshwater lake in this period.

The MwS4C-01 core (length 147 cm) from Lake Maruwanminami-ike was divided in 5 zones according to the diatom assemblage changes. Zone 1 (143.75~93 cm, ca. 4,800-2,900 cal yr BP) is coastal marine environment that mainly marine diatom is observed. In zone 2 (93~67 cm, ca. 2,900-2,400 cal yr BP), diatom assemblages is similar to zone 1, but pattern of relative percentage is different from zone 1. Zone 3 (67~58 cm, ca. 2,400-2,200 cal yr BP) is characterized by brackish diatom. The lake environment was brackish lake in this period. In zone 4 (58~31 cm, ca. 2,200-1,700 cal yr BP), gradual increase in freshwater diatoms suggest the Lake Maruwanminami-ike become the lower salinity environment than a coastal environment. In zone 5 (31 cm~Top, ca. 1,700-1,300 cal yr BP) the diatom assemblages are observed dominantly freshwater diatoms. It implies that the environment of Lake Maruwanminami-ike is freshwater lake in this period.

The timings of transition from marine to freshwater are at about 1,300 cal yr BP in Lake Oyako-ike and at about 2,400 cal yr BP in Lake Maruwanminami-ike. the difference of transition timing is derived from regional differences in retreat of Antarctica Ice Sheet in Soya Coast, East Antarctica. It seems that the uplift rate of Soya Coast is the largest in Rundvagshetta and smaller as to go to Skarvsnes. However, for discussion about the relation of regional uplift rate, it is necessary to perform various analyses in various sites in Soya Coast, East Antarctica.