



Reconstruction of paleoclimate using stalagmite on Ishigaki-Island, Japan

Y. Kayama (1), S. Sakai (2), and K. Okamoto (1)

(1) Saitama University, Japan (s11ac304@mail.saitama-u.ac.jp), (2) JAMSTEC, Japan

It has been known that stalagmites are one of the best tools to reconstruct the on land paleoclimate. Stalagmites have annual bands such as a tree rings. The bands are composed of carbonate grown from droplet on the top surface of the stalagmites. Oxygen isotope from carbonate grown in the stalagmites is useful to estimate paleo-temperatures. The oxygen and carbon isotope are inverse correlation to those of rain falls. Therefore, paleoclimate can be reconstructed from annual variation of temperature change in past millions of years in better case.

In the present study, we have collected stalagmites from the limestone cave beneath a construction area for new airport in Ishigaki Island, Japan. The Ishigaki Island is located in close to the southwestern extinction of Japanese Island. It is in sub-tropical area, and it is rainy compared to other areas in Japan. The cave is composed of Quaternary limestone. Just after we had collected the stalagmites, oldest Japanese bones were found in the cave. Age of the bones has been estimated as 20,000 years old. Therefore, it can be estimated the paleoclimate change from Ice age to inter Ice age. Origin of Japanese can be discussed in detail based on the present research.

We had cut the stalagmites along the longitude, and have selected the best specimens in which has a flat growth surfaces, representing homogeneous precipitation for elements and growth on the surface. The specimens which have recrystallization and contamination with mud-water, were rejected. Isotope variation in single band, were seriously examined (Hendy test) because isotope homogeneity was operated by precipitation of carbonate in equilibrium condition. U-Th age data were determined from bottom of the stalagmite, indicating $13,585 \pm 2,778$ years ago, respectively.

We would report isotopic change in the stalagmite and reconstruct climate change happened in western most Island in Japan.