

Magnetostratigraphy of Upper Cretaceous part of Yezo Group

HASHIMOTO, Shinya^{1*}, MOCHIZUKI, Nobutatsu², KOMATSU, Toshifumi¹, Yasuyuki Tsujino³, OHNO, Masao⁴, SHIBUYA, Hidetoshi¹

¹Department of Earth Sci., Kumamoto Univ., ²Pri., Org., Inn., & Exc., Kumamoto Univ., ³Tokushima Prefectural Museum,

⁴Faculty of Social and Cultural Studies, Kyushu Univ.

A paleomagnetic study of Haborogawa formation of the Yezo group in Kotanbetsu, Hokkaido, is carried out. Although this area is expected to have the Santonian-Campanian (Sn/Cm) stage boundary, its position is not well determined since *Marsupites*, which is one of the most significant index fossils of this boundary, is not yielded. On the other hand, this boundary is very close to the magnetic reversal at the end of the Cretaceous normal superchron (CNS). Thus, the magnetostratigraphy is useful to determine the stage boundary.

Samples are collected in 15 sites at Kotanbetsu river and its branches, Kamino-sawa and Nakano-sawa rivers, using a gasoline powered drill. The formation is mostly composed by sandstones and sandstone mudstone alternations. We collect calcareous nodules occur in the formation as the main paleomagnetic samples because the mudstones are fragile to take drill samples.

Rock magnetic studies of IRM acquisition experiments, thermal demagnetization of composite IRM experiments and magnetic hysteresis analyses are performed some representative samples. Rock magnetic analyses suggests that; (1) Main magnetic minerals are magnetites. Pyrrhotites are also seen in some samples. (2) Day plots indicate most samples fall in the pseudo-single-domain (PSD) region.

Superconducting rock magnetometer in Kyushu university is used for NRM measurements. Progressive thermal demagnetization (PTHDM) and progressive alternative field demagnetization (PAFD) are performed for pilot samples of all sites. After thermal demagnetization of 300~400 deg.C, remanent intensity increases significantly in most samples, possibly because of alterations. Hence, characteristic remanent magnetizations (ChRM) are mainly obtained by PAFD.

From 8 sites out of 15, ChRM is retrieved. They show that the end of CNS is situated at the top of Ug unit which is in the middle part of Haborogawa formation. It is confirmed in two sections of Kotanbetsu and Kamino-sawa rivers. Sn/Cm boundary is expected slightly above the level of the reversal.

Keywords: Magnetostratigraphy, Calcareous nodules, Santonian - Campanian stage boundary, Upper Cretaceous Yezo group, Kotanbetsu area