

Deposition process based on foraminiferal stratigraphy

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There are mound called Joetsu Knoll and Umitaka Spur which was associated with the formation of methane hydrate off the coast of Joetsu city, Niigata Prefecture. There are valley in east side of Joetsu Knoll, there have a very special geographical features. In this area, previous researches recognized 12 foraminiferal biozones and 8 diatom biozones. These are the good stratigraphic indicators in contrast of sediment core. Sediment core I use to study (MD179-3308) collected from the valley. The length of this core is 30.9m and water depth is 1224m. This core recognized 4 diatom biozones and at 5 layers of this core, radiometric age was measured. From these researches, it was estimated that there was a large age gap around 1620cmbsf in the sediment core. In the valley, it is considered that landslides and flows from the shallow occurred. For clarify depositional process and relationship of valley and mound, in this study, foraminifera in this sediment core was analysed.

Around 1620cmbsf in the sediment core, benthic foraminifera association and planktonic foraminifera numbers are changed. It is considered that the layer of 0 ~1620cm have a sedimentary record of about 30,000 years. In this layer, benthic foraminifera associations are similar to previous researches. It is considered that layer of 1620cm~2820cm have a sedimentary record of about 70,000 years ~110,000 years. Benthic foraminifera is alternated crowd in which *Brizarina pacifica* is priority species, and crowd in which *Eilohedra rotunda*, *Islandiella* sp are priority species. In particular, foraminifera in 1700cmbsf is characterized by *Brizarina pacifica* and maximum number of foraminifera.

Rutherfordoides rotundata output from 1000 ~1800cmbsf and 2280cmbsf. It is the related species of *Rutherfordoides coronata* which is methane-related species. Therefore, it is considered that sediment of these layers are derived from the methane seep.

Keywords: benthic foraminifera, planktonic foraminifera, foraminiferal number, methane hydrate, Deposition process