

Benthic foraminiferal assemblages from a tsunami deposit at Tateyama, southern Boso Peninsula, central Japan

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In this study, we examined foraminiferal assemblages in a tsunami deposit, at Tateyama, southern Boso Peninsula. The ages of tsunami deposits in this region have been estimated to be about 8500-6900 cal BP with ¹⁴C method (Fujiwara et al., in press)

The tsunami deposit in this work consists mainly of fine to coarse grain sand. It has distinct erosional surface at the base, and is divided into three units based on stratigraphic lithofacies changes, as follows:

Lower unit is fine to medium grain sandstone with siltstone breccia

Middle unit is fine to coarse grain sandstone that is characterized by having large conglomerate, low angle cross lamina and hummocky cross stratification.

Upper unit is fine grain sandstone with coaly matter, and intercalated thin clay layer.

In this work on foraminifera, we gave especial attention to faunal variations, size distribution and preservation of tests among the three units.

We collected a polygonal pillar-like samples (50cm long, 2.5x5cm wide) using stainless steel cases at an outcrop along Tomoe River, southern part of Boso Peninsula. In the laboratory, we sliced pillar-like samples into 1cm thick, and dried by freeze dry method and weighted. The sliced samples were washed by 250mesh (0.063mm) sieve and dried and weighted, to estimated mudcontents. We divided the washed samples and into aliquot size from which all the foraminiferal specimens are picked.

As a result of the analysis, we have found the following trends in the section.

Mudcontents is very low (about 6-18%) in the tsunami deposits, in contrast with higher value (about 94-97%) in the normal intervals below and above the tsunami deposit.

Benthic foraminiferal number/g in the tsunami deposits is almost twice as the normal one. Planktonic foraminiferal abundance in total foraminifera (so-called P/T ratio) in the normal sediments is about 3%, but about 40% in tsunami deposits.

Benthic foraminiferal assemblages in the normal sediments consist of following species: *Haynesina* sp., *Uvigerinella glabra* etc.. This assemblage indicates shallow and closed estuary or bay. On the other hand, the benthic foraminifera in the tsunami deposits are composed by following species: *Rosalina* sp., *Glabratella* sp. *Quinqueloculina* sp. etc.. It indicates the off shore environment, inner sublittoral zone in paleo-waterdepth.

Benthic foraminiferal fauna in the tsunami deposits are characterized by larger number of epifaunal species, larger tests in size, and less preserved tests, in contrast with the fauna in the normal one. These features of foraminiferal tests in the tsunami deposit indicates the allochthonous faunas from open sea region, which have been transported by tsunami from the outside of the paleo-estuary (or bay) in this area.