

## Formational process of diatom assemblage inferred from relations among distribution, size of diatom frustules and grain size

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In order to estimate the effectivity for the diatom environmental indicators of Kosugi(1988) for paleoenvironmental reconstruction, it is necessary to examine the formational process of dead diatom assemblage by the transportation and sedimentation of dead diatoms. These taphonomic processes were investigated based on the relation among distribution, size of diatom frustules, grain size of deposits and seasonal variations in a tidal area of Obitsu river, Chiba Prefecture, center Japan.

The results are as follows;

1. From the investigation on this taphonomic process in present environment, diatom frustules behaved as a silt-size grain, and the number of allochthonous dead diatoms of bottom sediment is large in the muddy environments.
2. In the muddy environments diatom frustules of dead diatom assemblage are finer than those of living diatom assemblage.
3. Allochthonous diatom frustules such as *Achnanthes delicatula* which were transported from tidal flat to tidal creek, are finer than 5.5 $\Phi$ .
4. Autochthonous diatoms such as *Hantzschia virgata* in tidal area are coarser than 5.0 $\Phi$ .
5. Among 27 species, 6 diatom species from the diatom environmental indicators of Kosugi(1988) are more effective for paleoenvironmental reconstruction than other diatom indicators.