

Flood-plain deposits and its fossil assemblages

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Flood-plain deposits record various kinds of terrestrial information. In this study, a relationship between sedimentary condition and fossil assemblages preserved in the deposits is considered for reconstruction of paleoenvironment.

The Middle Pleistocene Kiyokawa Formation, Shimosa Group, at Yoshinoda, Sodegaura-city, Chiba Prefecture, is composed of fluvial depositional system (including ox-bow lake, point-bar, natural-levee, and flood-plain deposits) and shoreface deposits in ascending order. The fluvial depositional system was formed during early transgressive stage of the relative sea level in interglacial period (Okazaki et al., 2003).

The flood-plain deposit of the Kiyokawa Formation, is divided into three depositional units by lithology and fossil assemblages, A, B and C units (Okazaki et al., 2003). Unit A consists of massive mud with abundant plants remains from wash load by flooding. Unit B is composed of ill-sorted muddy sands or sandy muds and contains numerous wood debris, isolated terrestrial vertebrate remains, freshwater molluscan shells and mudstone gravels. It might be accumulated by a mudflow accompanying with flooding. Unit C consists of massive muds and alternated layers of silts and fine-grained sands with in-situ freshwater bivalves and turtle. These fossils indicate that unit C is a deposit of the still water as a pond or shallow lake environments.

In the flood plain, sedimentary processes are an important factor to preserve fossil assemblages.

In addition, from grain size and mineral composition analysis of the muddy layer of the flood-plain deposits, the following results have been provided. There is a correlation between potash feldspar contents and grain size. Calcite is included in some units.

Possibility of estimating an environmental condition of a flood plain and fossil preservation condition from these composition analyses is examined.

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The fluvial deposits of the Pleistocene Kiyokawa Formation, Shimosa Group during sea level rise. The 110th Annual Meeting of Geological Society of Japan Abstracts p.200