

## Stratigraphy of alluvial sediments and paleo-environmental change in the Northern Lowland, Saitama Prefecture

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The Northern Lowland, Saitama Prefecture (the NLSP: the Menuma Lowland and the upper part of the Arakawa Lowland) is situated in the central part of the Kanto Plain. Several marked tributaries from Kanto Mountains join the Ara River at around the boundary between the NLSP and the lower part of the Arakawa Lowland. The authors clarified the stratigraphy of alluvial sediments in the NLSP based on analysis of boring data. These sediments are divided into G<sub>1u</sub>(gravel layer), S<sub>1l1</sub>(gravely sand layer), S<sub>1l2</sub>(silt, sandy silt layer), S<sub>1m</sub>(sand layer), and S<sub>1u</sub>(silt, sandy silt layer). In the lower part of the Arakawa Lowland, alluvial sediments are divided into I, II, III, IV, and V diatom zone (Ando *et al.*, 1997: Quarterly J. Geogr., 49, 231-246). G<sub>1u</sub>, S<sub>1l1</sub>, S<sub>1l2</sub>, S<sub>1m</sub>, and S<sub>1u</sub> are correlated to I, II, III, IV, and V diatom zone respectively. Based on the above correlation of stratigraphy, the authors reconstructed the process of development of the alluvial stratigraphy in the NLSP and the lower part of the Arakawa Lowland. In LGM, G<sub>1u</sub>(I) was deposited in the river valley which incised Pleistocene during the low sea-level stand. After LGM, S<sub>1l1</sub>(II) was deposited corresponded with sea-level rising. In the early Holocene, inner bay extended because of continuous rising of sea-level and marine sediments (III, IV) deposited in the lower part of the Arakawa Lowland. In the NLSP, gravel fan-front retreated upstream direction and S<sub>1l2</sub> of mainly fine flood sediments was deposited corresponded with the marine transgression. After 6800yBP, coastal line moved seaward with the deposition of the V zone sediments under relatively stable sea-level. In the NLSP, S<sub>1l2</sub> formation continued till 5800yBP under influence of the post glacial sea-level rise. Then, S<sub>1m</sub>, which can be correlated with progradating delta and/or fan sediments, began to deposit. These imply that the tributaries from the Kanto Mts. quickly filled with sediments the estuary and inner bay appeared along the lower part of the Arakawa Lowland due to glacial eustacy, while the NLSP had been affected by the continuous local base level rising produced by both the post-glacial sea-level rise and following accumulation by sediment supply from the tributary valleys. Since 3800yBP, S<sub>1u</sub> which consists of mainly fine flood sediments was deposited corresponded with decrease of sedimentation rate. This imply that the amount of sediment supply to the NLSP decreased because the Tone River started to change its course to the Kazo Lowland east of the Menuma Lowland about 4000 years ago(Kikuchi, 1979: Quaternary Res., 17, 215-221).