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Holocene dynamic changes of the Tone River course: recognition from the Chuseki-so along the Arakawa and Nakagawa Rivers

Susumu Tanabe[1]; Toshimichi Nakanishi[1]; Yoshiro Ishihara[2]; Rei Nakashima[1]; Katsumi Kimura[3]

[1] GSJ, AIST; [2] Fukuoka Univ.; [3] GSJ, AIST

In this study, we discuss the dynamic changes of the Holocene river course of the Tone River based on the chronostratigraphy of the latest Pleistocene to Holocene incised-valley fills (Chuseki-so) along the Arakawa and Nakagawa Rivers in the Paleo-Okutokyo Bay area. Nine sediment cores and more than 300 radiocarbon dates have been obtained from the valley axis, which are nearly located under the present Arakawa and Nakagawa Rivers. The Chuseki-so in this area consists of braided river (T.P.-70 to -45m, up to 11 cal kyr BP), meandering river (T.P.-60 to -30m, 13 to 10 cal kyr BP), estuary (T.P.-40 to -15m, 11 to 5 cal kyr BP) and delta (T.P.-30 to +5m, 7 to 0 cal kyr BP) sediments in ascending order. The estuary sediments in the valleys under the Arakawa and Nakagawa Rivers, respectively, distribute in T.P. -40 to -15m and T.P.-40 to -30m. The chronostratigraphic lines of 5 cal kyr BP in the delta sediments indicate that the deltafront clinoform under the Arakawa River was higher than 3/1000, where as that of the prodelta clinoform under the Nakagawa River was almost flat. The delta sediments accumulated the incised-valley under the Nakagawa River which deepens ca. 30m during the past 5000 years. These features suggest that the Tone River changed its river course from the Arakawa River to the Nakagawa River at about 5 cal kyr BP. This result supports the same hypothesis, which has been made by Kikuchi (1981), Hirai (1983) and Endo et al. (1988).