

Lateral erosion of Paleo-Tama river after MIS5.5 suggested by boring cores and data in the Tokyo Upland area

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In Tokyo, the Tokyo Formation, MIS6-MIS5.5, is distributed widely in the Yodobashi and Ebara Uplands (MIS5.5) and also beneath the Musashino Gravels (MIS5.3 - MIS4). In Setagaya Ward and Mitaka City, the Tokyo Formation is sometimes called as Setagaya Formation. The latter is characterized by soft marine mud deposited in narrow, elongated valley (Setagaya buried valley). These lithological features are a little different from the Tokyo Formation, which is muddy in the lower but sandy in the middle to upper, influenced by fluvial activities of the old Tama river.

A number of geologic profiles crossing the Musashino Upland by Endo et al. (2018, 2019) suggest a hypothesis that during the age of the Setagaya Formation, area of the Tama Hills (composed of the Kazusa Group) was much wider, covering whole of Mitaka City and Setagaya Ward. The Setagaya buried valley was located in the Tama Hills, and a small one like Tsurumi River in the Tama Hills. The Hills prevented inflow of water and debris by the Tama River into the Setagaya buried valley.

If we accept this hypothesis, lithological difference between Tokyo Formation and Setagaya Formation is explainable.

Following issues will be discussed.

1. How to interpret the geologic profiles crossing the old and present Tama River: The Musashino Gravels (MIS5.3 to MIS4) and the Tachikawa Gravels (MIS3 to MIS2) cut directly the Kazusa Group (soft rocks of the middle to lower Pleistocene).
2. Sengen-yama in Fuchu City, is a remnant hill of Kazusa G.
3. Mu-re remnant upland in Mitaka City is located along northern bank of the Setagaya buried valley.
4. In this hypothesis, the old Tama River must erode the Tama Hills (Kazusa G.) laterally as wide-ranging as 6 to 7 km after MIS5.5. Is the lateral erosion rate of 7 to 8 cm per year possible or not.

Keywords: old Tama river, Tokyo Formation, Setagaya Formation, lateral erosion, Tama Hills