

Sediments accumulated in the linear depressions in the Mitsumine area, Kanto Mountains

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Many problems about the mechanisms of an occurrence or a development of deep-seated gravitational slope deformations (DGSDs) are left behind. We are now researching in the Mitsumine area, Kanto Mountains, where is occupied by the Shimanto accretionary complex, in order to resolve the problems about the mechanisms of DGSDs. As a part of the research, simplified boring are executed in linear depressions near a ridge and boring cores composed by accumulated sediments are acquired.

Boring are operated in two different linear depressions and cores have reached the bedrock at the depth of 6.75 m to 6.95 m. Both cores have almost same characteristics; from the surface to the depth of 1.0 m, these are blackish brown humified soil or clay, and other parts deeper than 1.0 m are occupied by brown clay.

The date when the linear depressions or DGSDs on the hillslope emerged will be estimated by specifying the tephras included in the boring cores. We have observed the ratio of volcanic glasses in the cores every 20 cm and have recognized three peaks; the depth of 2.20 m in P1 (upstream side), 2.40 m in P2 (downstream side), and 6.00 m in P2. Other researches performed in the Mitsumine area have revealed that the depositions include several tephras, such as Aira-Tn (AT) tephra (26~29 ka), Ontake-Pumice 1 (On-Pm1) (100 ka), and Yatsugatake-Kawakami (Yt-Kw) tephra (170 ka). It is likely that each volcanic glasses in the boring cores originated in one of these tephras. We are now trying to observe the refractive index of volcanic glasses to identify the tephras in the core completely.

For the explication of the mechanism of DGSDs in this area, it is indispensable to reveal the geomorphological and geological characteristics in the area. We carry on not only analysis of the sediments accumulated in the linear depositions but also geological site investigations.

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