

HGM021-04

Room:301A

Time:May 25 15:00-15:15

## Stream-head migration in the head hollow of the hills :A preliminary observation in the western Kanto Plain

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Head hollow formed with colluvium is recognized in every valley-head, in which through-flow concentrates from surrounding upper slopes and promotes the initiation of stream. The head hollow contains narrow and shallow depressions (subhollows) which seem to have been formed and maintained with the repetition of excavation and burying. Proportion of micro-geomorphic units composing a valley head varies according to condition of throughflow concentration, which may have close relationship with morphometry and subsurface structure. Therefore both field observations and topographic measurement were carried out in order to compare the relationship between relief ratio and basin length of the first-order valley, which represents the condition of throughflow concentration, in a few hundred valley heads distributed in the hills which were composed of the Neogene or lower Pleistocene sedimentary rocks in the western fringe of the Kanto plain.

A few subhollows are distinguished in a head hollow located in the Iwadono Hills which show mordal relationship between relief ratio and first-order stream basin length. A subhollow which is longitindinary divided to the lower and the upper segments with a break of slope is filled with deposits containing gravel derived from the crest slope which is composed of Pliocene or lower Pleistocene gravels. The filling deposits in the lower segments are divided to the following their layers: the lower gravelly layer, the middle loamy layer, and the upper gravelly layer. On the other hand the upper segments show only one gravelly fill layer. Morphologic and stratifreplic interpretation of the subhollow form and deposits as above lead to the following history of the subhollow development: two cycles of excavation and burying were succeeded in the lower segment, while one cycle in the upper one. The repeating excavation and burying of the subhollow is a result of some environmental change in the head hollow and surrounding areas.

Further investigation on chronology and processes concerned with the excavation and burying is expected to provide the information of the environmental change.

Keywords: Valley-head, Micro-geomorphic, Head hollow, Subhollow