Japan Geoscience Union Meeting 2011
(May 22-27 2011 at Makuhari, Chiba, Japan)

HGM002-06 Room:301A Time:May 25 17:45-18:00

Block deposits in Japan and Korea

Masayuki Seto[1*], Yukiya TANAKA[2], HIroshi SHIMAZU[3]

[1]Saitama University, [2]Kyung Hee University, [3]Rissho University

This study examined aspects of slope processes corresponding to climatic changes on low altitude mountain slopes based on geomorphic and stratigraphic investigation of slope deposits. Using the name ”block deposition feature” which has no implication of particular formation processes for so-called block streams. There are many block deposition features and block fields in Japan and Korea. This study analyzed the morphological characteristics of a block deposition feature near Mt.Yokone on Kobugahara Plateau in the northern part of the Ashio mountains, composed of granodiorite. New findings are concerning the age and the formative processes of slope deposits on the Kobugahara plateau, northern part of the Ashio Mountains, which are composed of granodiorite with thick weathering crust. Many blocks which are originated from core stone distributed on the plateau. At Mt. Yokone in the Kobugahara, the block deposition feature is located in a valley head. A few streams spring out from the both sides of the block deposition feature, and seeps under the blocks. After detailed survey of longitudinal and cross sections and plan forms of the block deposition feature, the feature is divided into the three segments: A, B, and C. Segment A and C show narrow forms and thin block deposits, while segment B is wide with thick block deposits. There are some lobes on Segment B. Segment A and C are run-ways of blocks and segment B is a zone of block deposition. It is indicated that core stones moved on slopes. Since there are some lobes on Segment B, slow mass movement may have played a role in its formation. Superficial deposits of slopes consist of the gully-fill colluvium, the upper slope deposits, and the lower slope deposits. The upper slope deposits are composed of humic soil and silty-clay layers. The lower slope deposits include blocks, fragments of weathering rind, and pumice and scoria correlated to Ag-KP(45-50 ka) and Nt-I (14-15 ka), respectively. Blocks and fragments of Ag-KP are randomly scattered in brown silty matrix, while Nt-I fragments are contained in the upper part of the lower slope deposits. The gully-fill colluvium composed of silt-clay and blocks fill gullies excavated in the lower slope deposits. Block deposits which form block deposition feature also fill troughs excavated in the lower slope deposits. The above evidence indicates that the period of slope instability, which denotes the phase of active colluvium migration on slopes in changing environment, started around the fall of Ag-KP and ended before the Nt-I falling. After the period, block deposition features were formed. Facies and the mode of occurrence of the lower slope deposits suggest that they were formed with some kinds of slow mass-movement, which acted extensively on several geomorphic positions. Not only their facies but also their age do not exclude that these processes were active in periglacial environment. This conclusion contributes to reveal slope processes corresponding to climatic changes on low altitude mountain slopes.

Keywords: block stream, block deposition feature, block fields, slope processes, Korea, Ashio mountains