montane zone on Mt. Sumon-dake. Formation of this vegetation pattern is considered to be controlled by not only present climatic condition but also its historical change. This study examined the soil stratigraphy along the main ridges of Sumon-dake because it is expected to record the change in vegetation. Besides, characteristics of mountain slopes and vegetation were investigated to estimate the change in distribution pattern of vegetation on the basis of historical changes of the slope processes.

A peaty soil layer, which is considered to be originated from the grasses which are observed to live in the meadow, directly covers the surface material which forms the crest gentle slopes and the fossil snowpatch hollows. Although the peaty soil layer is widely found not only under the meadow but also under the dwarfed Fagus crenata community and the scrub, the peaty soil layer is covered by a humic loam layer with no plant remains under the dwarfed Fagus crenata community and the scrub. The peaty soil layer is estimated to have formed during 9,000-7,500 cal y BP because the soil layer intercalates the Azuma and the Kikai-Akahoya tephas, which are the middle Holocene tephas, in its middle to lower parts. The above soil-stratigraphic evidence indicates the following vegetation changes. Periglacial and nivation processes became less active by 9,000-7,500 cal y BP, subsequently the pseudo-alpine meadow widely established on the crest gentle slopes and the fossil snowpatch hollows. At that time, the upper limit of montane vegetation area lay in the altitude 100-250 m lower than present limit. The pseudo-alpine meadows reduced their distribution, and the scrub began to extend around 2,000 cal y BP in the most parts of the crest gentle slopes. Fagus crenata trees also probably extended its habitat upward. The upper limit of montane vegetation area rose to its present position in the late Holocene.

Study on easy set up method of input data to slope failure predicting model from a handy dynamic cone penetrometer [JE]

by Sinya Hiramatsu and Kenya Bitou

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Slope failures occur frequently in many parts of Japan in rainy seasons every year. It is necessary for disaster prevention, to predict the occurrence of slope failure. Recently, a calculation speed of calculator have made rapid progress and improved. Therefore, numerical simulation model is used frequently to predict slope failure. However, much time and labor become necessary in order to set input data to these models. In this study, easy set up method of input data to slope failure-predicting model from a handy dynamic cone penetrometer, was proposed. Following matters were found through this study. Bulk density and porosity show dependable logarithmic correlation to the magnitude of Nc value. Still more, saturated hydraulic conductivity shows dependable powers correlation to the magnitude of Nc value. By using these approximate expressions, soil characteristic coefficients to slope failure-predicting model can be decided without soil test in sandstone region.
Further, in order to estimate thickness of surface soil layer without detailed investigation, boundary Nc value-predicting model was presented. Applying this model to this study area, boundary Nc value was understood to be 9 in sandstone region. Taking these results into consideration, it was clarified that the magnitude of Nc value would be a parameter indicating soil physical properties and thickness of surface soil layer. Furthermore, by investigating vertical distribution of Nc value from a handy dynamic cone penetrometer test, it is possible to estimate input data to slope failure-predicting model easily by means of boundary Nc value-predicting model. Therefore, these methods proposed in this study, can become an effective measure to predict collapse quickly, by being linked with slope failure-predicting model.

Rockfall at the valley wall in 'Koke-no-domon', June 2001 [JE]
by Satoshi Ishimaru, Masazo Takami and Takao Oka
On 2 or 3 June 2001, a rockfall occurred at the valley wall in 'Koke-no-domon'. We investigated the cause. The results are summarized as follows: 1) The rock strength is weak, and the intervals of cooling joints are wide. The steep cliff with overhung slope was formed by side erosion at the rockfall site. 2) As a result a gravity-genesis sheeting joint crossed cooling joints developed. These discontinuous faces surrounded the block of the rockfall. 3) The wall was exposed by especially cold air in the winter 2000-2001, and thus ice remained in the sheeting joint in the early June. 4) The pore pressure of the discharged groundwater from melting snow and precipitation in the sheeting joint push the ice, and toppled the individual rock

Summary report of earthflow research at Inasato, Hokkaido [JE]
by Satoshi Ishimaru, Jun Tajika, Masazo Takami, Yuji Endou, Noritoshi Okazaki, Hiroaki Takahashi, Wataru Hirose and Yasuyuki Kachiara
The results from this earthflow research are the following. 1) Earthflows are distributed in the places which have thick soil layers and water preservable landforms, and row resistance rock for example mudstone, serpentinite, and tuff. 2) Side ridges of the earthflows are formed to override sediments to the side direction. Terminal mounds are formed to press against sediments. 3) The earthflows have gradients of velocity in the bodies. The deformation is most in a soft saturated layer. 4) The subsurface soil layer with the lower soft layer is deformed when the rising of the water content from heavy rain and melt water weakens resistivity of the subsurface layer. 5) The interval between the beginning of a heavy rain and the beginning of an earthflow movement is a few hours.

Long-term change of the bare slopes of Tenakami Mountains using aerial photographs and digital