# AN IGNIMBRITE DEPOSIT FROM THE HOLDVILÁG CREEK, VISEGRÁD MOUNTAINS, HUNGARY

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In the Visegrád Mountains, the westernmost part of the calc-alcaline volcanic arc of the Inner Carpathians, in a deep valley called Holdvilág Creek, there is a pyroclastic deposit which has not been described yet with the methods of modern volcanology.

The Visegrád Mountains are built up of Middle Miocene andesite and dacite lavas and pyroclastic deposits. Our research group has studied the deposits of the north–south striking valley of the Holdvilág Creek. Several volcanosedimentary units have been described on the basis of the main constituents of the deposits, their physical (grain size, roundness etc.), textural and structural characteristics, and considering the presence of the features in connection with the pyroclast flows and surges of magmatic eruptions (evidences of hot deposition, gas segregation pipes, etc.).

On the top of Miocene marine sediments, the basal layer is a fine-grained, weathered, thin-layered tuff, which could be the deposit of a pyroclast (ash) fall in marine conditions. It is overlain by a 0.5 m thick, medium sorted, cross-bedded unit containing coarse ash and fine lapilli size lithic elements and pumice, and accretional lapilli referring to a wet, turbulent deposition from ground surges. This is overlain by a 5 m thick, massive, unsorted unit made of graded lithics of garnet bearing dacite, pumice lapilli and ash. This is overlain by another, very thin tuff layer and a thick, massive, totally unsorted, structureless unit made up of angular, poorly vesiculated blocks of juvenile cognate lithics, sometimes showing the signs of oxidised surfaces and prismatic jointing (both are the main features of hot deposition and cooling). On the top of these, after an alternating series of fine and coarse-grained layers, a 7 m thick, massive, unsorted unit made of graded lithics and reverse graded pumice lapilli and ash is deposited. This unit contains vertical channels filled with coarser material, which are gas segregation pipes. According to these characteristics the latter unit can be classified as a non-welded *ignimbrite*. The uppermost layers could are probably lost due to erosion.

Based on the lithological and volcanological characteristics of the deposits, the initial phases of the Miocene volcanic activity can be restored. It started with an ash fall in marine setting, followed by ground surges and a pumice rich pyroclast flow in a coastal environment, forming the crossbedded, coarse depleted basal layer and the coarser, pumiceous pyroclastic breccia respectively. On top of these a block and ash flow deposited its coarse blocks. At the end a pumice and ash flow created the ignimbrite unit.

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