

## The Vepor stratovolcano: a new paleovolcanological reconstruction (Central Slovakia)

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Denudation remnants of presumed Neogene intrusive-extrusive bodies exposed in the area of the Veporic unit were identified in the past. A new detailed volcano-structural and litho-facial study led to identification of the central, proximal and distal volcanic zone of the stratovolcano. Huge strato-volcano covering area ~300 km<sup>2</sup> was named the Vepor stratovolcano.

The roots of **the central volcanic zone** were exposed by deep erosional cut around the Magnetovy vrch hill (960 a.s.l.), to NW of Tisovec town. The multi-stage diorite porphyry intrusion (K-Ar age: 12.08 ±0.47 and 12.28 ±0.42 Ma, respectively) of cedar shape completely destroyed former feeding system. The intrusion in its deeper part steeply penetrates through the complex of the Hercynian crystalline rocks and at the upper levels it widens and transforms into several above-lying sub-horizontal sills emplaced along crystalline complex and Mesozoic carbonate sequences boundary. Intensive scarnisation evolved at the contact of carbonates with the diorite intrusion. The diorite intrusion was later cut by parallel dyke system of andesite and diorite porphyry (K-Ar age: 11.94 ±1.0 Ma) of W-E to ENE-WSW direction. Younger dyke swarm of basaltic andesite to basalt (K-Ar age: 12.02 ±1.05 Ma) of ENE-WSW orientation probably represents a feeding dykes of small parasitic volcano placed in the vicinity of the central volcanic zone. A several intrusive-extrusive bodies of hyperstene amphibole andesites ± garnet (K-Ar age: 12.10 ±0.38 Ma) are scattered on the former stratovolcanic slopes in the area of **proximal zone**. Deeper parts of extrusive-intrusive bodies, characterized by autometamorphic alteration, are exposed by erosion. Only one small parasitic volcanic neck

with adjacent scoria cone was preserved from denudation, volcano Stožka, to the north of the central volcanic zone. Volcanosedimentary sequences deposited in the **distal volcanic zone**, representing the denudation remnants of the volcanoclastic rocks, filled former radial-oriented paleo-valleys with respect to central volcanic zone: the Hajna hora hill complex, Klenovský Vepor complex and Pokoradza formation (W, SW and S from central volcanic zone, respectively). Paleo-valleys are filled by pyroclastic and epiclastic volcanic rocks (block-and-ash flows, ash-pumice flows and lahars) alternating with layers of epiclastic volcanic sandstones and conglomerates.

Evolution of the stratovolcano was in the **initial stage** linked with explosive activity of vulcanian and plinian at the beginning. During effusive and explosive activity the stratovolcano was formed. The **second stage** is characterized dominantly by effusions the lava flows. More viscous lava formed exogene and extrusive domes of hornblende andesites with garnet on the volcanic slope. The diorite intrusion emplaced in the central volcanic zone. **Third stage**: emplacement of parasitic small volcanoes and intrusive-extrusive bodies in the proximal zone. Feeding channels for parasitic volcanoes are represented by dyke swarms in the central volcanic zone. Volcanic activity terminated by outflow of the the Klenovský Vepor lava flow dated by radiometric K-Ar method to 10.82 ±0.40 Ma. During **fourth stage**, in the course of enormous regional movement uplifting and formation of updoming structure the stratovolcano was intensively destructed and eroded. The subvolcanic intrusive complex was due to erosion exposed on the recent surface.