

Results of Paleomagnetic Study in the Vihorlatské vrchy Mts (East Slovakia)

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The Vihorlatské vrchy Mts. is a range of andesite stratovolcanoes. They belong to the arc type basaltic andesite to andesite volcanics situated very close to the assumed subduction zone of the Outer Carpathians and being parallel to it (Lexa et al., 1993). The oldest volcanics of the Vihorlatské vrchy Mts. are those of the Vinné Complex (Late Sarmatian, 11,95 Ma) and the extrusive rhyodacite body Beňatinská voda of the same age (12 Ma). The above laying stratovolcanoes as Sokolský potok, Morské Oko, Popriečny are younger and more or less contemporaneous lasting in time from the Late Sarmatian to Pannonian (11,9–10,0 Ma).

The andesites of Vinné Complex according to the paleodeclination measured have been CCW rotated by 25–26° (road cut at Vinné, Trnava pri Laborci – castle hill) and Beňatinská voda Rhyodacite extrusive body by 30°.

The other measured andesites are not rotated or slightly CW rotated. The Sokolský potok Stratovolcano is radiometrically

dated to 10,2–10,9 Ma. The andesite belonging to those stratovolcano sampled at the Jovsa village is not rotated at all (1° CW). The Popriečny Stratovolcano is radiometrically dated to 10–11,6 Ma and the andesite lava flow sampled at Podhorod' village was CW rotated by 7°. The radiometric age of Morské Oko Stratovolcano is of 9,4 to 11,9 Ma. The lava flow of the stratovolcano sampled at the village of Zemplínske Hámre was not rotated (0°). Another lava flow of the same stratovolcano sampled south of the Morské Oko Lake has been CW rotated by 17°.

From the paleodeclination data follows the Vihorlatské vrchy Mts. have been CCW rotated after the Sarmatian. Younger volcanics, Pannonian in age are not rotated, or slightly CW rotated. This is in a good agreement with the concept of the East Slovakian Basin Neogene rotations (Marton et al., 2000). The Vihorlatské vrchy Mts are situated at the NE basin margin.

A New Natural LPO Type of Clinopyroxene: Evidence from EBSD Study of Eclogite Xenoliths from Kaapvaal Craton, South Africa

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Introduction of EBSD method during nineties allowed detailed measurement of lattice-preferred orientation (LPO) of clinopyroxene, a principal mineral of "orogenic eclogites", naturally deformed between 500° and 900°C in order to characterize rheology and petrophysical properties of subducted oceanic crust. The L- and the S-type of clinopyroxene LPO have been described for the first time in eclogites from xenolith suite of Colorado plateau kimberlites that have textural and mineralogical characteristics similar to those of eclogites from glaucophane schist terrains (Helmstaedt et al., 1972). The L-type is characterized by [001] axes, which lie parallel to the lineation and (010) poles in the plane normal to the lineation, whereas S-type shows [001] axes form girdle in the foliation plane and (010) planes are parallel to the foliation. Beside transitional types of LPO between the L- and S-type, there was not observed different LPO in omphacite (e.g. Van Roermund, 1983; Goddard and Van Roermund, 1995; Bascou et al., 2001). The LPO of clinopyroxene from "mantle eclogites" that was taken

up to the surface by kimberlitic eruptions from the lithospheric upper mantle has not been studied, yet. In this work, we present LPO of natural clinopyroxenes from six eclogite nodules taken up to the surface by kimberlite eruptions in the Kaapvaal craton, South Africa. Five nodules were sampled in the Roberts Victor mine, and the last one came from the Premier Mine. PT estimates has been performed on every nodule in order to characterize metamorphic conditions of the LPO development. Generally, there are two groups of samples that show distinctly different microstructure, LPO of omphacite (one of them is unknown) and corresponding PT conditions of its development.

Group 1:

Sample HRV277 is coesite + kyanite + sanidine eclogite of medium-grained microstructure with elongated garnets defining foliation. HRV113 shows coarse-grained microstructure with regular distribution of rounded garnet grains and