

ABSTRACT:

Diploma thesis deals with geological, petrological, structural and geochemical studies of the most probably neoproterozoic volcanic and sedimentary rocks of the Pičín belt in the area NW from Dobříš, approximately between the villages Trnová and Chouzavá. Volcanics of Koží hory area, which are demonstrably included into Davle Formation have been used for comparison with the Dobříš area. One of the major part of the work includes geological mapping on scale of 1:10 000, which served as a base for a more detailed petrological, structural and geochemical studies.

Some lenses of lava and volcanoclastic breccia and minor layer spilite were newly discovered, areal extent of some cherts bodies and basaltic dykes were modified. Basalts, andesites and dacites bodies have been reclassified against the basic geological map of 1:25 000 (Havlíček, 1985; Mašek, 1987). Basalts in the Havlíček's (1985) map actually represent a very fine-grained rhyolites (ignimbrites) with disseminated ore minerals with layers of pyroclastic rocks (ignimbrites, volcanoclastic breccia). Areal extent of andesites and dacites bodies were modified and new body of trachyandesite was detected. Extremely fast cooled grained textures and series of features corresponding to welded tuff (ignimbrites) shows that the tuffs were deposited in relatively shoal environment in the vicinity of volcanic elevations.

Neoproterozoic sedimentary rocks of Pičín belt, were divided into three different greywacke stripes of NE-SW direction. The greywackes and the shales from the individual stipes differ by content of the volcanic material, chert lenses and conglomerates, or by grain size.

Fold pattern consist of folds of different amplitudes and wavelengths. Structural measurement suggests the presence of a large compressed anticline with NE-SW direction in the green greywacke strip, which then around Brodec and Trnová passes into the syncline in the greywacke stripe.

The area is cut by two major faults NE-SW direction, „Jílová porucha“ Thrust and „Závist“ Thrust. Their activity begins probably already in the Precambrian, movements on them repeated in different modes during the Cambrian to Ordovician and later in the final stages of Variscan orogeny.

The results of geochemical study showed that there are geochemically distinct groups of volcanic rocks in the study area. In the first case these are the calc-alkaline rocks with steep REE pattern, which are strongly enriched by LREE elements. The second group of calc-alkaline rocks, which includes majority of samples, are characterized by a significant europium anomalies, a slight enrichment in LREE and with a medium HREE enrichment. To the third group belong quite primitive rocks with tholeiitic trend and flat REE curves poor both on LREE elements as well as on HREE. Greywackes of Pičín neoproterozoic belt have similar REE pattern as the first group of volcanic rocks, which is evidenced by the dominance of the material that was brought from the volcanic arc. Geochemical study showed a relatively high variability of rocks within the Pičín belt and different sources of magmas for volcanic rocks in Dobříš area, which have significantly different in a number of features from acid and intermediate volcanic rocks of the Koží hory area.

KEY WORDS:

Teplá-Barrandian area, Pičín belt, Neoproterozoic, Cambrian, volcanic rocks, sedimentary rocks, Davle Formation, Koží hory area, geology, petrology, geochemistry.