REMARKS TO MAIN TECTONIC FENOMENA ALONG THE NORTHERN PART OF THE SEISMIC TRANSECT 2T

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Abstract: Paper is focused to regional tectonic problems based on re-interpretation of the seismic transect 2T one of the dominant in the territory of the Slovak Republic presented in Atlas of deep reflection seismic profiles of the Western Carpathians and their interpretation (Vozár et al. 1999).

Key words: deep reflection seismic transect 2T, Tatricum & Northern Veporicum, ? Penninicum

Already traditional question concerning the Tatricum unit basement is the Penninicum problem (Leško and Varga 1980) or the problem of unit representing function of the Penninicum here (Vahicum sensu Maheľ, 1981). The Penninicum represents a hypothethic unit in the Western Carpathians. None of the units belonging to the Flysch zone, which according to some ideas might represent Penninicum in the Western Carpathians, does not overlap the lineament of the Klippen Belt. Based on the deep seismic profiles crossing the Outer Western Carpathians, Klippen Belt and Inner Western Carpathians (3T, 8HR, 6HR, 2T, G) it is not possible to interpret continuation of units belonging to the flysch zone toward the inner part from the Pieniny Klippen Belt (Vozár et al. 1998, 1999).

Contact between the Tatricum and Veporicum, which are dominant units in the Inner Western Carpathians, is interpeted as a north-verged overthrust of metamorphic rocks belonging to the Northern Veporicum (sense Vozárová & Vozár, 1988) on the prevailingly granitoid basement of the Tatricum in the southern part of the Ďumbierske Nízke Tatry - Ďumbier Lower Tatras (e.g. Koutek 1931). Originally defined Čertovica Line (Zoubek 1953 in Maheľ et al. 1964) as a tectonic contact of the Veporicum and Tatricum was at the same time interpreted as a scar after reduced depositional area of the Krížna Nappe extended above the Veporicum basement (Biely and Fusán 1967). This thrust line was identified with the Donovaly Line in its western continuation in the Starohorské vrchy Mts. (Jaroš 1971) and according to other interpretation it was redefined as the Čertovice Fault localized partly in the Hron valley between Čertovica pass and Banská Bystrica city (in Maheľ edit. 1964). In seismic transect 2T the contact of the Northern Veporicum and Tatricum is well defined on the southern slopes of the Ďumbier Tatras and it is perpendicular or steeply dipping toward south. Faults with almost perpendicular projection in the Hron valley, which we

interpret as intra-north-Veporic, are parallel with this tectonic phenomenon. This structural phenomenon affects crystalline rocks, their envelop, Mesozoic rocks of upper nappe units and Late Cretaceous - Tertiary fill. According to some indications it also affects the Quaternary deposits. Several faults identified on surface probably have only local and shallow establishment and they are not identified in seismic profile (e.g. Osrblie Line sensu Zoubek in Maheľ edit. 1964).

Structural position of the upper unit i.e. the Northern Veporicum is documented in the profile 2T/85 by bundles of reflectors dipping slightly toward south. Zones of metamorphic rocks prevail which have expressive reflectors. Zones of lower reflectivity, characteristic for granitoid massifs, are less represented in the transect. In some parts of the northern Veporicum profile it is possible to observe discontinuous reflectors dipping toward north which are interpreted as relics of the Hercynian structures on crystalline basement by Bezák et al. (1995). Root zone of the Krížna Nappe (Andrusov 1968, Biely 1961, Biely and Fusán 1967, Jaroš 1971, Maheľ edit. 1964, Maheľ 1964, 1986, Vozár 1965) or the Fatricum (sensu Andrusov et al. 1973) may be localized in the Northern Veporicum based on geologic, mainly structural and facial evidence. In the Northern Veporicum substantial shortening of the space is assumed which is related to displacement of crystalline and Mesozoic nappes but in the seismic transect 2T localization of the rear part of the Krížna Nappe is ambiguous.

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