shows that the net effect is that hardly any space is left for sediment accumulation, despite the advance of the orogenic load over the foreland. Identification of such situations provides insights into the late stages of emplacement of orogenic edifices over the foreland.

# Early-Variscan collision and generation of leucogranite melts in the Western Tatra Mountains (S-Poland, W. Carpathians)

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Collisional granites, especially leucogranites, are important elements in the orogenic process and markers of the collisional zones. In the Western Tatra Mountains crystalline basement two structural units could be distinguished: Lower Structural Unit (LSU) and Upper Structural Unit (USU), differing in metamorphic conditions. LSU is formed by mica schists intercalated with the amphibolites (T = 545–584 °C; P = 5–8 kbar), whereas USU is composed of migmatitic gneisses and amphibolites, graphite quartzites and orthogneisses (T = 640–780 °C; P = 7–9 kbar). Rocks of LSU are present on both S- and N-sides of the basement, but they differ from each other. Mentioned units form together the inverted metamorphic zonation (Janak 1994, Gawęda and Kozłowski, 1998).

On the N-side of the W-Tatra metamorphic basement the shear zone was established, dipping to SE and deforming the S1 foliation by the younger S2 foliation. The shear zone and fold axes inside the deformed USU were intruded by small leucogranite bodies (called traditionally alaskites). On the S-side of the W-Tatra metamorphic basement the shear zone dipping to NW is present, intruded by the Main Tatra composite granitoid pluton (Kohut and Janak, 1994). Leucogranites were probably older than the Main Tatra Granite (Gawęda et al. 1999). They are fine-grained, poor or lacking in micas, peraluminous in compositions, S-type allochtonous granites. Leucogranites are typical products of dehydration–melting of muscovite at the presence of graphite. The tectonic transport of the leucogranite melt top-to-NW was established in oriented samples. Their geochemical features are typical of syn-collisional continental granites, formed in water deficiency and predominance of $CO_2$ (from the graphite oxidation) in anatectic fluid.

The geometric discordance between two shear zones and two foliation trends could be interpreted as the trace of the collision of three microplates: A = LSU on the Polish (N) side, B = LSU on the Slovak (S) side, C = USU (delaminated lower crust/upper mantle). The composite collision produced two collision sutures in which the melting of leucogranite magma took place (345 Ma; Gawęda 1995). During the further stages of Tatra basement development the southern zone, dipping to NW, dominated and acted as the pathway for Main Tatra Granite intrusion (cooling ages 300–325 Ma, Janak 1994). In the presented model, the traces of Early Variscan collision could survive only on the N-side, what is consistent with the field observations. Leucogranites from the Western Tatra Mountains have some analogues in other crystalline basements in the Central Western Carpathian Belt and could be used as the proof of the collisional stage in the Pre-Carpathians orogeny development.

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