Gondwanide terranes towards the Equator. The Prague Basin Silurian as well as Devonian fauna points to the Barrandian Terrane position within the peri–equatorial zone. The Middle Devonian paleolatitude is estimated to be less than 10° S. During the Mid–Devonian, the Prague Basin extension terminated; appearance of the flysch facies sediments derived from southern sources during the Givetian correlate with the onset of the Ligerian orogenic pulse of the Variscan orogenic cycle with which sedimentation ceased in the Barrandian Terrane.

The Lower Paleozoic Prague Basin and the other Early Paleozoic sequences of the Barrandian Terrane represent the remnants of an originally much larger basin which can be interpreted as a component of a back–arc basin of the Ligerian–Moldanubian Cordillera that is thought to correspond to a primeval tectonic element of the Variscan foldbelt.

THE STORY OF VARISCAN GRANITE MAGMATISM IN THE WESTERN CARPATHIANS (SLOVAKIA)

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The first granite–forming event, producing *S–type* magmas in the Western Carpathian segment of the Variscan orogen occurred probably during upper Devonian/lower Carboniferous times. It might have resulted both from the thermal re–equilibration and resulting metamorphism after crustal shortening, and from the heat input following a possible slab detachment. Later, at the end of Carboniferous a widespread thermal event, possibly intrusion in hot mantle magmas, might have caused melting of lower crustal lithologies to give *I–type* granitoid magmas bearing distinct features of magma mixing (enclaves). This event may record either a renewed subduction or lithospheric thinning following the previous delamination. The last (Permian) granite group, with the *A–type* tendency, may have formed during the post–orogenic stage in tensional régime along huge faults. In general, the development of granite magmatism in the Western Carpathians is analogical to that along the whole Variscan orogenic belt.

While the *S–type* granites record a formation from quartzo–feldspathic mica–bearing source rocks *via* muscovite ± biotite dehydration melting in reducing and relatively water–poor conditions, those of the *I–type* group indicate a deeper origin from intermediate biotite–bearing source lithologies due to biotite (hornblende?) dehydration reactions. Primary mineralogy confirms the formation in oxidizing and relatively water–rich conditions. These features evoke the basic magmas to be have been enriched in volatiles during an earlier subduction event. Mafic magmatic enclaves point to a deep heat source. Smallest by volume, the *A–type* granite group suggests an origin from a drier source rock (possibly having already experienced a melting event) in moderate oxidation conditions stressing a more significant role of other volatiles (e.g. F).

STRATIGRAPHY, SEDIMENTOLOGY AND SANDSTONE COMPOSITIONS OF LATE ORDOVICIAN CLASTIC SEQUENCES IN THE CARNIC ALPS

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Sedimentological parameters of ca. 20 sections including Late Ordovician sequences distributed over the eastern and central Carnic Alps reflect several depositional cycles. In the Fleons Fm., the lowermost here studied formation, marine sedimentation was dominated by high sediment supply into a fan delta environment and by mafic, later acidic pyroclastic rocks. In the following Trieb Fm., high energetic near shore environments with coarse clastics and transitions into low energetic, deeper marine environments were observed. A sequence stratigraphic model was used for correlation of sections (Fig.1). Sections reflecting shallow marine environments are marked by low angle angular disconformities pointing to an erosional phase within the lower Trieb Formation. Above this disconformity, up to 80 m thick clastic sequences reflect sedimentation under transgressive conditions. This large, by a rising sea level dominated cycle is overprinted by smaller regressive and transgressive cycles. In the follow–

ing Uggwa and Wolayer Limestone Fms., transgressive clastic sedimentation changed into carbonate deposition followed by the Plöcken Fm. with regressive tendencies.

Detrital modes of sandstones (according to the DICKINSON–GAZZI method), heavy mineral analyses, and zircon typology monitor changing sandstone compositions due to change of sources through time. The Fleons Fm. is dominated by a mixed source with volcanic and metasedimentary material. The sandstones of the Trieb Fm. are relatively mature reflecting a basement uplift, which is mainly composed of gneisses and/or granitic rocks beside much intraformational clasts. A trend to more metamorphic sources with time was observed. Considering general trends, the Late Ordovician clastic sequences of the Carnic Alps indicate a continental block provenance within a rift environment. Studies of euhedral zircons reflect a similar trend: In the Fleons Fm., euhedral zircons point to magmatic rocks like I– and A–granitoids, which may idicate a mantle source. In opposite, zircons of the Trieb and Plöcken Fms., reflect S–type granitoids which are typical for a continent–continent collisional regime in an orogen. According to $^{40}Ar/^{40}Ar$ ages of detrital micas from the Trieb Fm. (DALLMEYER and NEUBAUER, in press), the age of the plutonometamorphic hinterland is assumed to be Early Cadomian (older than 640 Ma).

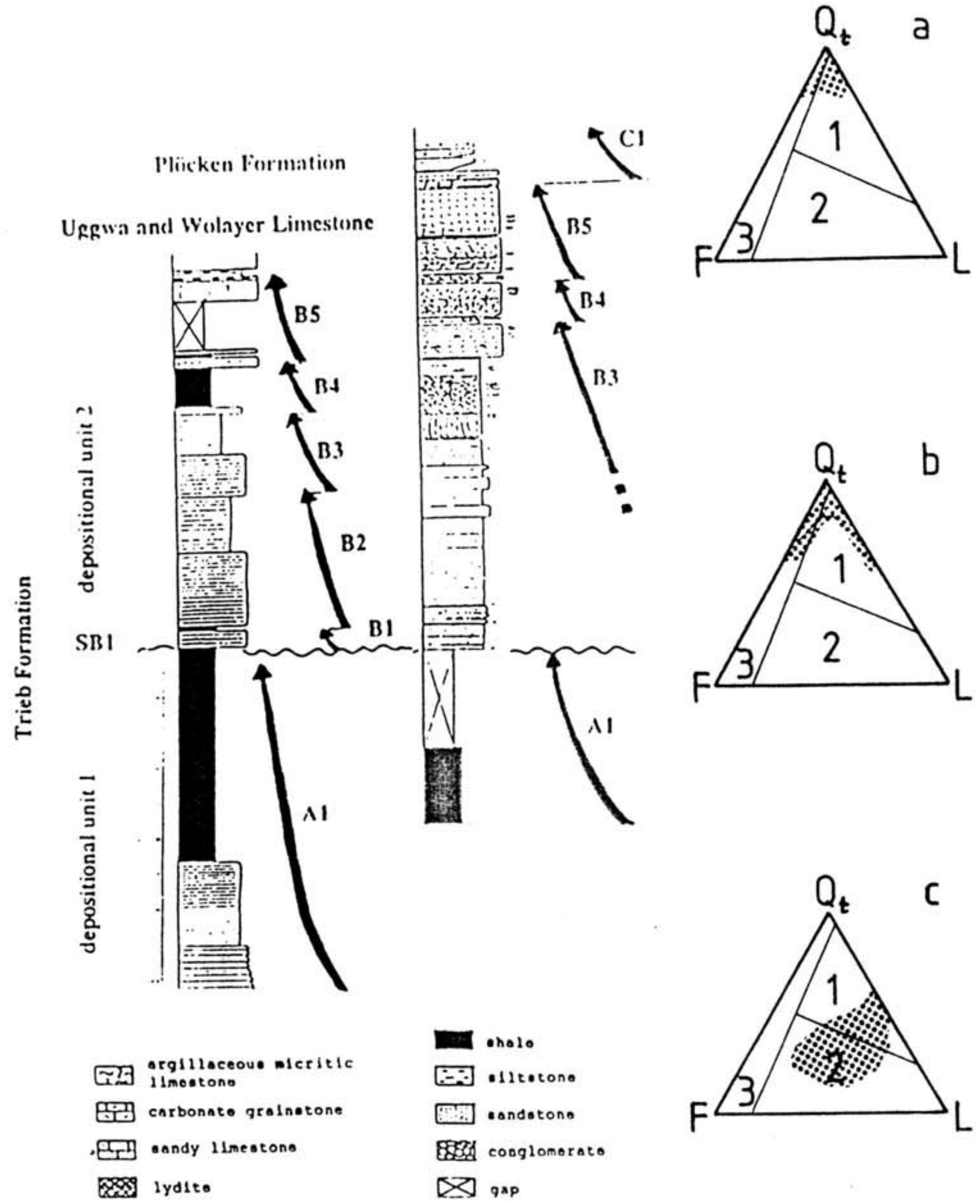

Fig. 1. Sequence stratigraphic interpretation of Late Ordovician to Early Silurian sequences of the Carnic Alps. SBI – sequence boundary. A, B, C: major cycles. Sandstone compositions of the Plöcken Fm. (a), Trieb Fm. (b) and Fleons Fm. (c). Qt – quartz total; F – feldspar; L – lithic fragments.

In conclusion, the succession of formations reflects general subsidence in an extensional regime (syn–rift– and post–rift sedimentation) which is superimposed by eustatic sea level changes.

Reference
Dallmeyer, R.D. – Neubauer, F. (in press): 40Ar/40Ar age of detrital muscovites from the Carnic Alps: Evidence for a Cadomian linkage of the Eastern Alps. J. geol. Soc London.

ULTRAMAFIC ROCKS IN THE MOLDANUBICUM – BOHEMICUM BORDER AREA (BOHEMIAN MASSIF).

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There are isolated occurences of ultramafic rocks in the area between moldanubicum and bohemicum which might contribute to the knowledge of the upper mantle in this zone. Moldanubicum is a gravimetrically lighter terrain with few magnetometrically positive units. Bohemicum on the other side is heavier with steeper magnetometric gradients. Mantle rocks are known from these units as xenoliths (Jakeš and Vokurka 1987) and from mantle slabs which were emplaced tectonically (Mísař et al. 1971, Machart 1982, Dudek et al. 1990 and others). Some of the ultramafic rocks have been recognized as members of ophiolite complexes (Mísař et al. 1984, Jelínek et al. 1984). Differences in geochemistry implicate mantle heterogenities which have not been fully explained (Jelínek 1991) and suggest gradients.

The zone between moldanubicum and bohemicum consists of the "Jílové zone" and the "Islet zone" of the central Bohemian pluton in the NW and of the Železné hory area in the NE. It is characterized by different stratigraphical and lithological development of the Upper Proterozoic and Lower Palaeozoic sequences compared to the Barrandien block (Kachlík 1992 and Chlupáč 1992). The ultramafic rocks of the "Islet zone" are situated in a Silurian sequence (Urbanův mlýn near Mirovice). These are serpentinites and pyroxenites with low TiO_2 contents (0.2%) suggesting relative primitive geochemical nature with little differentiation. They are very different from the spatially close ultramafics of the Barrandien area which are mostly of Silurian age and have very high TiO_2 levels (picritic intrusions and flows) interpreted as within plate volcanics, eg. Patočka et al. in print. In the Ti:Cr:Ni diagram the rocks from this border zone are closer to the rocks from the border zone between Orlice – Kladsko unit and the moravosilesicum than to the ultramafic rocks of the moldanubicum. The temperature of their equilibration is somewhat higher than the average temperature of moldanubian ultramafics.

Ultramafic rocks in the NE of the border area (Želené hory) are part of the Ransko intrusive massif. This massive is of tholeiitic chemistry, including rocks from ultramafic cumulates to gabbros and quartz diorites. Also in this part of the border zone rocks posses low TiO_2 levels. However, the age of the Ransko massive is uncertain (Cadomian to Variscan).

Geochemistry of the ultramafic rocks from the border zone shows fundamental differencies compared to similar rocks from adjacent units, suggesting different mantle and/or crustal regimes.

CHRONOLOGY OF MOVEMENTS IN CENTRAL EUROPE IN NEOTECTONIC ERA

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Collision continuing between the plate of Africa, has carried to the north, relative to stable Europe, over 200 Ma at a almost steady rate of about 25 mm/year. The Proterozoic continental core of Europe (Fennosarmatia) has hardly changed its position relative to the Earth's rotation axis (contrary to Af–