Variscan orogenic wedge propagated generally in E-W direction from central West Sudetes to frontal parts of the KJT accretionary complex (the JRU) since the pre-Late Devonian to Tournaisian.

The JRU Late Palaeozoic volcanism started in the latest Middle Devonian according to the fossil record, and was rather protracted as the Tournaisian flysch is intruded by diabase dykes and sills. Timespan of the Ar-Ar ages of the Variscan metamorphic events related to the waning of subduction and subsequent exhumation + thrusting on the E and S of the KJT (365–340 Ma) (Maluski and Patočka 1997; Marheine et al. 2000) extends from Late Famennian to the latest Tournaisian (cf. Gradstein and Ogg 1996; Tucker et al. 1998). It is shorter than, and also set within the active period of the JRU Late Palaeozoic volcanism. Tectonic setting of the lithospheric extension-related Late Palaeozoic bimodal volcanism of the JRU is essentially antagonistic, albeit contemporaneous, in relation to tectonic regime of the W-propagating orogenic wedge in the other parts of the KJT. This contrast supports an idea that juxtaposition of the KJT complexes is a result of Variscan large-scale nappe stacking originated since Late Devonian to Early/Late Carboniferous boundary.

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References

CHLUPÁČ I., 1993. Stratigraphic evaluation of some metamorphic units in the N part of the Bohemian Massif. *N. Jb. Geol. Paläont., Abh.*, 188: 363-388.

FRANKE W., 1999. Tectonic and plate tectonic units at the northern Gonwana margin: evidence from the Central European Variscides. *Abh. Geol. B.-A.*, 54: 7-13.

KACHLÍK V. and PATOČKA F., 1998. Cambrian/Ordovician intracontinental rifting and Devonian closure of the rifting generated basins in the Bohemian Massif realms. *Acta Univ. Carol., Geol.*, 42: 57-66.

MARHEINE D., KACHLÍK V., PATOČKA F. and MALUSKI H., 2000. Variscan polyphase tectonothermal record in the West Sudetes (Bohemian Massif) – deduced from Ar-Ar ages. Program and Abstracts of the 15th International Conference on Basement Tectonics, Galicia 2000 – Variscan-Appalachian dynamics: The building of the Upper Palaeozoic basement, pp. 254-257.

PATOČKA F., KACHLÍK V. and FAJST M., 2000. Mafic-felsic to mafic-ultramafic Early Palaeozoic magmatism of the West Sudetes (NE Bohemian Massif): the South Krkonoše Complex. *Z. geol, Wiss.*, 28: 177-210.

PHARAOH T.C., 1999. Palaeozoic terranes and their lithospheric boundaries within the Trans-European Suture Zone (TESZ): a review. *Tectonophysics*, 314: 17-41.

The Role of Palaeotopography and Tectonics in the Stratigraphy of Fluvial Through Shallow-Marine Deposits of the Peruc–Korycany Formation (Cenomanian) in the SE Part of the Bohemian Cretaceous Basin

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The initial phase of deposition in the Bohemian Cretaceous Basin during the Middle-Late Cenomanian was characterized by filling of pre-depositional topography by fluvial and paralic depositional systems. One of the important problems in understanding the evolution of the basin is the relationship between the "passive" topographic elements such as palaeovalleys and the formation of actively subsiding depocentres which dominated the later phases of shallow-marine deposition.

This study focuses on regional stratigraphic patterns in the Peruc–Korycany Formation (Middle to Late Cenomanian) in the southeastern part of the Bohemian Cretaceous Basin, the Svitavy sub-basin according to Uličný (1997). The main data base for our study is a number of regional cross-sections based on well-log, core, and outcrop correlation, and a series of regional isopach maps in time-slices.

The whole sedimentary succession of the Peruc–Korycany Fm. was divided, on the basis of detailed well-log correlation, into four informal stratigraphic units A-D. Unit A corresponds approximately to the lower part of the Peruc Member and it is interpreted as deposits of braided and meandering rivers. Units B and C correspond to the upper (paralic) part of the Peruc Member. Marine microfossils reported from these units by previous studies prove the proximity of epicontinental sea. Unit B comprises sediments deposited in estuarine environment: deposits of bay-head deltas, central basin, and marginal swamps are interpreted as parts of a back-barrier depositional system. Facies of unit C developed almost completely in the deeper central basin of the assumed estuary. Unit D roughly corresponds to the shallow-marine Korycany Member in the study area. Highly glauconitic, bioturbated sandstones and cross-bedded quartz sandstones with mud drapes and reactivation surfaces are typical lithofacies of this unit characterized by strong tidal influence.

The isopach map of the whole thickness of Cenomanian sediments, based on over 600 borehole logs, revealed two main centres of sediment accummulation, generally coinciding with the "depressions" previously described by other authors. However, such map provided no information about the history of deposition and also did not distinguish between filling of pre-existing palaeovalleys and deposition of tectonically active depocentres. Time-slice maps, showing the loci of deposition of roughly synchronous stratigraphic units distinguished in our cross-sections, show an interesting temporal and spatial evolution of deposition in the study area.

Isopachs of units A-C (fluvial and paralic) indicate deposition in elongated palaeovalley of SSE direction between the cities of Litomyšl and Letovice, joining the Blansko Graben further south. This palaeovalley followed the Semanín Fault and the source area was located to the NW. Another palaeotopographic low of the same direction and origin (palaeovalley) is situated in the western part of studied region.

Isopach map of shallow-marine unit D shows an abrupt change of the position and orientation of depocentres, as well as of the source of clastics. Part of the infill of previous palaeovalley was uplifted during the sedimentation of unit D and, as a result of this tectonic activity, a topographic ridge emerged in the position of the former incised valley. Two newly developed depocentres which actively subsided during the deposition of unit D, fringed this SE-oriented palaeohigh in the north and south. The southern depocentre was probably connected to the Blansko Graben. The main source of siliciclastic sediments was the area to the south of the southern depocentre, several tens of kilometers beyond the present extent of the basin.

According to the proposed strike-slip depositional model of the Bohemian Cretaceous Basin (Uličný 1997) and the above results, it is assumed that the main structures controlling the basin evolution were NW-NNW – oriented fault zones active in a dextral strike-slip regime. The study area behaved structurally as a pull-apart sub-basin formed between overlapping segments of the principal displacement zone. The intrabasinal high which emerged during the deposition of unit D is probably related to similar phenomena described from pull-apart basins formed at overlapping fault segments by Dooley and Mc Clay (1997).

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References

ULIČNÝ D., 1997. Sedimentation in a reactivated, intra-continental strike-slip fault zone: the Bohemian Cretaceous Basin, Central Europe. Abstracts, 18th IAS Regional European Meeting, September 2-4, 1997, Heidelberg. Gaea heidelbergensis, 3, pp. 347.

DOOLEY T. and Mc CLAY K., 1997. Analog modeling of pull--part basins. AAPG Bulletin, 81 (11), 1804-1826.

The Gneissic Complex of the Staré Hory Mts. – Its Hercynian and Alpine History

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Tectonic significance of the Staré Hory Mountains for the evolution of to the Central Western Carpathians has been recognized for a long time. However, the crystalline rocks from this area were not studied in detail for more than thirty years. Because of its enclosing by sedimentary rocks – verrucano and Mesozoic carbonates, this crystalline complex is commonly denoted as the Staré Hory window. The geological structure and tectonic evolution of the mentioned area were a matter of long lasting discussion between advocates of "fixism" – all crystalline basement is only autochthonous (Hynie 1923; Hynie and Kettner 1924; Kubíny 1954–1965) and advocates of "mobilism"– – part of crystalline basement is autochthonous (granites) and parts of crystalline (gneissic complex) are in tectonic – allochthonous (nappe) position (Koutek 1937; Andrusov 1958; Jaroš 1965, 1971; Vozárová and Vozár 1988). However, gneissic complex was described as an Early Paleozoic "para-crystalline" – sedimentary in origin complex, dominated by muscovite-biotite paragneisses, mica shists and metaqartzites, partly injected by "orthogneissic material" having thus character of banded and augen migmatites (Jaroš 1965, 1971)!? Although orthogneisses were identified in the Staré Hory Mts. already by Hynie (1923) and Koutek (1937), hypothesis of sedimentary and/or migmatitic origin of gneissic complex was preferred. On the basis of petrography, the granitic rocks of the Staré Hory Mts. are generally compared with the Nízke Tatry Mts. (Tatricum) granites while the gneissic complex is compared either with the identical rocks on the southern slopes of the Nízke Tatry Mts., or with those of the Northern Veporicum. The penetrative brittle-ductile overprint of the Staré Hory Mts. gneissic complex is considered to be Alpine in age in analogy to strongly sheared Vepor basement (Jaroš 1965, 1971).

The crystalline complex of the Staré Hory Mts. has been newly investigated in the frame of new geological mapping. The integrated research reveals that gneissic complex is presented in various small isolated "windows and outliers" and/or bigger body composing of three imbricated slices. Within this crystalline complex prevail sheared igneous mainly granitic rocks – orthogneisses. In general various structural types of gneiss are present, e.g., coarse-grained "augen" orthogneiss and medium grained – "banded gneisses" representing ultramylonites in which the relics of K-feldspar megacrysts are still preserved in form of polycrystalline monomineralic elongate aggregates. Fine-grained quartz-feldspathic gneisses represent mylonites to ultramylonites. In between fine-grained orthogneisses felsic weakly deformed fine grained geniss are present and are interpreted as relics of aplitic granites. Sporadically, small conform lenses of amphibolites and younger cross cutting gabbro-amphibolitic dykes are present. The metamorphic conditions of these highly strained igneous rocks have not been determined yet. However, based on microstructural criteria, e.g., generally ductile character of deformation and S-C fabrics, grain-size reduction, elongated feldspathic aggregates and presence of quartz ribbons P-T conditions of amphibolite facies can be depicted. Albeit, the age of magmatic origin is still unknown, the deformation and/or recrystallization were Hercynian in age as indicate new Ar/Ar data from muscovites and biotites. Nearly equal plateau ages (PA) of muscovites 337.4 ± 5.3 Ma resp. 338.9 ± 3.7 Ma from augengneisses and "banded" orthogneisses are consistent with