Caledonian crust may, therefore, be considered a tough indentor during Variscan orogeny, that led to tectonic deformation of Carboniferous formations in the Kaczawa region.

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GEOCHRONOLOGICAL CONSTRAINTS ON THE TECTONOMETAMORPHIC DEVELOPMENT OF THE WEST SUDETES (BOHEMIAN MASSIF)

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The Bohemian Massif is the largest exposed part of the Variscan orogen in Central Europe. The West Sudetes (NE margin of the Bohemian Massif) consist of a complex mosaic of several tectonometamorphic units regarded as autonomous terranes. The terrane juxtaposition is interpreted as a result of Variscan multiple collisions of members of the Armorican Terrane Assemblage and amalgamation of these peri-Gondwanan microplates with Baltica and/or Avalonia. The subsequent late Variscan large-scale thrust and horizontal shear movements generated the dominant architecture of the West Sudetes. The succession of Palaeozoic tectonothermal events is recorded in the metamorphosed igneous and sedimentary rocks of the West Sudetic terranes. The polyphase Variscan development of the West Sudetes was precised by single grain and population ^{40}Ar-^{39}Ar ages.

The oldest ages around 365-360 Ma were obtained from the mafic blueschist in the East Krkonose Complex (EKC) (Maluski & Patocka 1997) and the high-grade rocks of the Gory Sowie Massif. This coincidence suggests that the end of a subduction related HP-LT metamorphism in the EKC was contemporaneous with the end of a HT-LP metamorphism in the Gory Sowie Massif. In the EKC and South Krkonose Complex the blueschist metamorphism is followed by uplift-related greenschist up to lower amphibolite facies overprint which is dated at 345-340 Ma. Cooling ages of high-grade rocks between 340 Ma and 330 Ma in the Orlica-Snieznik Dome postdate the peak of HT-LP metamorphism, which is interpreted as consequence of rapid uplift and decompression after a former HP-event. The interpretation of similar ages in the Izera gneisses, the northern part of the Krkonose-Jizera Crystalline Unit, about 335-330 Ma is still not unequivocal. Thus they could represent cooling after greenschist facies overprint or even late shearing in this unit. Subsequent late Variscan small- to large-scale shear- and thrust movements dated at around 325-320 Ma affected all the above mentioned units, including the Intra-Sudetic Fault, contemporaneously. The upper limit of the tectonometamorphic and magmatic activity is dated at 314-313 Ma.

The distribution of Ar-Ar ages in the West Sudetes reflects the complexity of the Variscan polyphase deformation and metamorphism ranging from very low-grade to eclogite facies with peaks around 360 Ma (HP-; HT-events), c. 340 Ma (HT-event) and c.

325 Ma (shearing and thrusting). The final juxtaposition of the diversified tectonometamorphic units, which constitute the West Sudetes, took place in the Late Carboniferous.

A comparison of geochronological data obtained from subduction related HP-rocks of the Armorican Terrane Assemblage reveals the set of broadly contemporaneous latest Devonian HP-events at least in the West Sudetes (EKC), Armorican Massif (Champtoceaux, Ile de Groix) (e.g. Ballevre et al. 1999) and NW Iberian Massif (Malpica Tuy) (e.g. Rodriguez Aller et al. 1997). This conformity could be interpreted as closure of intervening seaways between members of the Armorican Terrane Assemblage at around 360 Ma (Carboniferous/Devonian boundary).

THE EAST –CARPATHIAN CRYSTALLINE-MESOZOIC ZONE: AN EXHUMED TESZ SEGMENT

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The East Carpathian Crystalline Mesozoic Zone (CMZ) is a pre-Alpine crustal fragment involved in the Alpine orogeny. It is built up by Precambrian-Variscan metamorphic basement with Mesozoic sedimentary cover. The CMZ metamorphic basement comprises several pre-Alpine structural units sandwiched by Alpine thrust nappes.

The lower pre-Alpine units show Gondwanan features: Upper Proterozoic (Kräutner et al., 1976) platform sequences (quartzose gneisses, dolomites, quartzites, micaschists and amphibolites that form Rebra and Negrisoara Groups), late Proterozoic volcano-sedimentary sequences (Pietrosu Bistritei Formation) and Cambrian-Ordovician sedimentation and volcanism (Tulghes Group). The Upper Proterozoic (Kräutner et al., 1976) Bretila Group (orthogneisses, pelitic gneisses, amphibolites and micaschists), presumably a part of the East European Platform (EEP), was thrust over the above mentioned units.

In our interpretation, Rebra Group, Negrisoara Groups and Pietrosu volcano-sedimentary formation illustrate the predrift evolution of a former microcontinent split from Gondwana and docked the EEP. Tulghes Group consist of sedimentary, ocean floor and volcanic arc sequences accreted during the Early Paleozoic drift of the peri-Gondwanan microcontinent towards the EEP. This fact, as well as the lack of any Devonian and Carbonifer sequences, indicates a Calredonian dockind to the EEP rather than a Variscan one, thus an Avalonian (Cadomian) provenance of the Rebra-Tulghes terrane. The age of Tulghes Group metamorphism (420 Ma, Zincenco, 1995) advocates this assumption.

The collision with the EEP should have been very strong and led to the detachment of Bretila slab from the EEP and its movement over Tulghes Group. The thrust of Bretila slab determined the sliding of Tulghes Group and Negrisoara Group along subhorizontal surfaces above Rebra Group forming the Putna, Pietrosu Bistritei and Rebra Nappes.

A Silurian-Lower Carboniferous distensional period determined the opening of a basin eastward from the newly formed suture. Psammites, basic volcanics, graywacke, limestones and pelites accumulated in this basin, forming Repedea, Rusaia and Cimpoiasa Groups. The basin closed during Middle Carboniferous, probably as effect of Armorican terranes docking to the EEP. This event produced the weak metamorphizm of