known about the brittle and brittle/ductile kinematics during the extrusion of tectonic wedges, which will be shown in this paper.

The LHCS consists of mylonitic-ultramylonitic gneisses that have been deformed under greenschist-amphibolite conditions. At the base, the LHCS is bounded by the Munsiari Thrust (MT), an out of sequence thrust which separates high-grade gneisses of the LHCS from low-grade quartzites with intercalated metabasites of the non-active part of the Lesser Himalaya (LH) in the footwall. The Karcham Normal Fault (KNF) represents the boundary at the top of the LHCS cutting trough statically recrystallized, mylonitic, high-grade meta-sedimentary rocks of the Main Central Thrust (MCT) that belong to the Higher Himalayan Crystalline (HHC).

The footwall of the wedge is dominated by NW-SE trending NE dipping thrusts that indicate top-to-the SW thrusting in the LH during the MCT history. The following deformation is indicated by brittle reactivation of the foliation parallel to the ductile lineation and back thrusts. Steeply dipping faults, most of them at right angles to the main foliation, suggest movement along interlinking strike-slip faults. Within the wedge, the foliation shows gradual rotation to E-W trending directions and the brittle reactivation results in shallow E dipping slickenlines with top-to-the E shear-sense related to an E-W extensional regime.

The prominent KNF (Hager et al., 2002) is located within the hanging wall of the LH. It is a zone of distinct layers of cataclasites-ultracataclasites. Microstructures and different generations of slickenlines reveal multiphase normal faulting which started at the brittle/ ductile transition zone and resulted in NNE-NE dipping lineations whereas the younger lineations show E-ESE directions. The KNF is definitely not a reactivation of the MCT, but simply a very young brittle normal fault zone cutting through the several hundred meter broad zone of statically recrystallized and folded MCT mylonites.

On-going tectonic deformation in the Sutlej Valley is furthermore reflected by different observations like deformed Quaternary lake deposits, tilted terraces, seismicity, several hot springs and significantly younger cooling-ages within the LHCS compared to the footwall and hanging-wall units. These data suggest very recent and probably even still ongoing exhumation of the wedge.

Hager, C., Janda, C., Grasemann, B., Draganits, E., Vannay, J-C., Bookhagen, B. & Thiede, R., 2002. The Karcham Normal Fault. A new brittle structure in the Sutlej Valley, NW-Himalaya, This Volume.

Strontium chemostratigraphy of carbonate sediments – pilot study of Silurian and Devonian brachiopods from the Prague Basin

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The unmetamorphosed Ordovician–Devonian sedimentary sequences of the Barrandian basins form a folded and brittle-deformed synform extending from Prague to the SW. The sediments display a peri-Gondwanan affinity and belong to 'Armorican' group of terranes within the Bohemian Massif. The boundary intervals between members and stages show mostly gradual changes and this, together with wealth of fossils and widespread carbonate sedimentation in late Silurian–Devonian, made Barrandian a classic terrain with several internationally recognized stratotypes (most importantly of the Silurian/Devonian Boundary). Unfortunately little attention has been paid so far to chemostratigraphy, with Sr isotopic data being virtually absent. Hence main aims of our study were: (1) to characterize the isotopic composition of Late Silurian to Middle Devonian seawater in this region to facilitate correlations with similar sequences abroad, (2) to test whether the basins were fully connected with the world ocean reservoir and provide constraints on their sedimentary environment, (3) to apply the Sr isotopes for direct dating of sections lacking stratigraphically significant pelagic faunas. As a study material were chosen microdrilled samples of secondary layer of little altered brachiopods, arguably the best available proxies for composition of Palaeozoic seawater (e.g., Veizer et al. 1999).

The new Sr isotopic data for Lochkovian–Early Givetian brachiopods from the Prague Basin behind the Koněprusy reef closely follow the development of the main ocean reservoir. In Pragian–Emsian, however, the data points plot above the seawater curve extrapolated from the database of Veizer et al. (1999). This, together with high contents of transition metals and high $\delta^{18}O$ values for carbonate of the studied brachiopods (Hladíková et al. 2000), indicate that the communication of Prague Basin with the ocean reservoir had to be, at that time, rather limited. On the other hand, this barrier must have been incomplete, as the exchange of planktonic faunas was not interrupted. As an analogous anomaly was not observed in brachiopods from the Pragian sequence of the Koněprusy reef itself, it may be concluded that it was exposed to open ocean and its Sr isotopic ratios should be usable for dating. When our results from apical part of the reef are compared with reference data of Veizer et al. (1999), ratios 0.70840 to 0.70842 indicate Middle Pragian ages corresponding to the *kindlei Z.* (Janoušek et al. 2000). On this basis it seems that the Pragian sedimentation on the Koněprusy ridge was relatively short-lived, reflecting mostly a secondary mid-Pragian sea level rise, with the Upper Pragian carbonate beds being either primarily absent and/or later largely truncated.

Taken together, the easiest explanation of the available stratigraphic and geochemical data is that reef structure at Koněprusy, preserved fragmentarily, originally continued in large oceanic reef chains of atoll shape that separated the inner part of the Prague Basin from the main ocean reservoir. Considering a slight and even diminishing content of silt and clay in carbonate deposits of these Pragian–Eifelian times, the anomalously radiogenic compositions some of the brachiopods may be due to: (1) retarded development of Sr isotopic ratios as a consequence of incomplete homogenization of the detached basin with the main ocean reservoir, (2) deposition of aeolian dust from the Old Red Continent in the NW (cf. rich Old Red spore assemblages in zoo-geographically peri-Gondwanan Barrandian, Hladil & Bek 1999), (3) limited dispersal of lateritic weathering products around eustatically emerged carbonate plateaux.

Petrogenesis and geodynamic significance of peraluminous post-orogenic granites: Ševětín Massif, Moldanubian Batholith

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Strongly peraluminous post-orogenic granites form a conspicuous rock suite in the waning stages of an orogenic cycle. Two alternative heat sources for the intracrustal melting are commonly accepted: the decay of radioactive elements in orogenic belts with substantial crustal thickening (HP–LT orogens, e.g. Alps and Himalayas), and conduction/convection of mantle heat in 'thinner' belts (LP–HT orogens, e.g. Variscan) (Sylvester 1998). Within Central Europe are widespread volumetrically rather small post-orogenic calc-alkaline metaluminous and, more rarely, peraluminous granitoid plutons whose emplacement was connected with brittle tectonics developing at the twilight of the Variscan orogeny (~ 310–290 Ma group 4 of Finger et al. 1997). In the Czech part of the Moldanubian (South Bohemian) Batholith, such a petrographic and geochemical character has been ascribed to the Pavlov and Ševětín granites (e.g., Matějka, 1991, Klečka & Matějka, 1996, Matějka & Janoušek, 1998, René et al., 1999).

In the composite Ševětín Massif (20 km N of České Budějovice) three main granite pulses can be distinguished: (1) the oldest, two-mica Deštná granite with cordierite ± andalusite (SE part of the massif), (2) biotite–muscovite Ševětín granite (BMG), constituting most of the granite pluton, and (3) fine-grained biotite Ševětín granite (BtG) forming only minor bodies. Concerning the Ševětín granites, the whole-rock geochemical signature of the BtG is less evolved than that of the BMG. The former shows lower SiO_2, Na_2O, K_2O and A/CNK accompanied by higher TiO_2, FeO_t, MgO, Al_2O_3 and CaO. The BtG is also characterized by higher contents of Rb, Sr, Cr, Ni, La, LREE, Eu and Zr than the BMG.

The initial Sr isotopic ratios for four of the Ševětín samples are nearly uniform regardless their petrology (BtG or BMG), showing fairly evolved character of the parental magmas ($^{87}Sr/^{86}Sr_{300}$ = 0.70922–0.70950) with sample BR484 being even more radiogenic ($^{87}Sr/^{86}Sr_{300}$ = 0.71290). The initial epsilon Nd values are all highly negative ($\varepsilon^{300,Nd}$ = -7.4 to -8.0; BR484: $\varepsilon^{300,Nd}$ = -9.2) and this is reflected by high two-stage Nd model ages ($T^{Nd,DM}$ = 1.60–1.75 Ga).

Ševětín granites are probably fairly late, with indirect evidence indicating an age comparable with Mauthausen Group in Austria (~ 300 Ma). This statement is consistent not only with similarities in the whole-rock geochemistry and Sr isotopic compositions (even though the Nd isotopic signatures of the two do differ profoundly) but also with occurrence of Ševětín granites close to late major regional fault forming a part of Blanice Graben generated during the late Variscan extensional collapse. Moreover, the shallow intrusion level is supported by the morphology of minute zircon and apatite crystals and the Ab–Qz–Or normative compositions.

Both the Ševětín granites (BtG and BMG) are coeval; their Sr–Nd isotopic compositions and whole-rock geochemistry correspond to LP–HT dehydratation melting of largely quartz–feldspathic metasediments, geochemically matching the typical Moldanubian para-gneisses ($^{87}Sr/^{86}Sr_{300}$ > 0.713 and $\varepsilon^{300,Nd}$ < -9.5). Some role for a relatively primitive component with low time-integrated Rb/Sr and Sm/Nd ratios ($^{87}Sr/^{86}Sr_{300}$ ~ 0.705 and $\varepsilon^{300,Nd}$ > -7) is also envisaged. These could have been undepleted or slightly enriched mantle-derived magmas or partial melts of metabasic rocks. Both BtG and BMG can be linked by up to *c.* 10 % of (nearly) closed system biotite–plagioclase fractional crystallization. The observed minor Nd isotopic heterogeneity could be explained by an influx of slightly isotopically and geochemically different melt batch(es) into periodically replenished and tapped magma chamber (RTF).