migmatites. The metasedimentary metatexites and diatexites were deformed by homogeneous viscous flow, but showing a complete continuity between pre-rheological critical melt percentage AMS fabrics and AMS fabrics associated with viscous magma flows. Metatexites with low proportion of melts (<50%) and metagraywacke mesosomes exhibit rather high degree of anisotropy associated with plane strain to oblate ellipsoid shapes. The leucosomes show plane strain ellipsoid shapes and weaker degree of anisotropy reflecting strain and complex deformation history associated with boudinage process. The diatexites and granites (>50% of melts) show very weak degree of anisotropy and highly variable ellipsoid shapes which may reflect undisturbed rotation of carriers of magnetic anisotropy (biotite) in freely moving melts. The AMS study of diatexites and heterogeneous granites showed consistent directions with regional extension, which was further used as direction of main pervasive flow.

Mechanical behaviour of rocks with low ability to melt also depends on the volume of granitic magma. This was examined in two large gneissic domains surrounded by diatexites and heterogeneous granites. These domains show different AMS pattern of solid state gneissosity with respect to main pervasive magma flow. Detailed AMS study of rocks with low volume of melts confirmed presence of original steep anisotropy oriented in E-W direction preserved in the core of large gneissic domain. Towards the margin of this megaboudin (10 km in length and 5 km in width), the AMS of solid state annealed rocks document folding of original anisotropy by 100 m large buckle folds with long limbs close to the direction of surrounding pervasive magma flow. In addition, the AMS fabrics of leucocratic magma provide evidence that the anatectic leucosomes are aligned approximately parallel to the axial surface of folds suggesting magma injection perpendicular to the direction of active contraction (Vernon and Paterson, 2001). The study confirms connection between regional shortening and melt segregation along contractional localized shear zones clearly associated with process of buckling.

The second megaboudin of gneissic rocks shows significantly higher proportion of magma. The AMS of solid state annealed rocks confirmed existence of large scale (10 to 100 metres) recumbent folds with hinges parallel to main stretching direction of surrounding pervasive flow. However the fabric study of leucocratic melts show distribution along conjugate zones oriented in obtuse angle with respect to the solid-state anisotropy intersecting perpendicularly to the axes of large-scale folds. We follow Cosgrove (1997) in assumption considering hydraulic fracturing in anisotropic material, which was based on layer-normal compression analogous models introduced by Kidan and Cosgrove (1996). We suggest that the anisotropy and magnitude of differential stress are the main factors influencing melt distribution at this stage. We also argue that the melt moved through and out of the partially molten anisotropic system by hydraulic fracturing along the planar, horizontal stretching fabric and gently inclined normal kink-bands (extensional shears).

This study shows that the AMS method is a powerful tool to investigate the tectonically driven magma mobility. We believe that the degree of deformation connected with early buckling and later on with shortening perpendicular to the main anisotropy are the main factors controlling magma behaviour and distribution in partially molten crust.

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Tourmaline from the NYF Pegmatites in the Třebíč Durbachite Massif

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Pegmatites of the Třebíč durbachite massif represent a distinct type of granitic pegmatites within the Moldanubian territory (Novák et al., 1992). Pegmatites form relatively small bodies (up to 1 m in thickness) enclosed in durbachites. Čech (1957) distinguished two types on the basis of different internal structure and mineral assemblages: I) small homogenous pods and segregations composed of K-feldspar, plagioclase, quartz, biotite, allanite, zircon and rutile, and II) more evolved, symmetrically zoned dykes. Zoned dykes consist of marginal, medium-grained granitic zone (Kfs + Qtz + Pl + Bt) locally transitional to the host durbachite, graphic zone (Kfs + Qtz ± Bt), blocky K-feldspar (locally amazonite) zone and occasionally quartz core. Medium- to coarse-grained albitic unit is either emplaced between quartz core and block zone, or forms irregular nests within blocky K-feldspar. Accessory minerals include: tourmaline, allanite, zircon, REE-Nb-Ta-Ti oxides, ilmenite, pseudorutile, Nb-rutile, titanite, beryl and phenakite (Čech et al., 1999; Novák and Čech, 1995). The presence of REE-Nb-Ta-Ti oxides, overall mineral paragenesis, characterized by scarcity of primary muscovite, spatial and genetic relations to the durbachite, suggest that these types of pegmatites may belong to the NYF family (see Černý, 1991), rare-earth type (Novák et al., 1992) and – according to the classification of NYF pegmatites (Wise, 1999) – to the euxenite subtype. Pegmatites are mostly metaalu-

minous, the presence of tourmaline shifts the bulk composition to the slightly peraluminous field.

Tourmalines from three localities (Klučov, Terůvky and Pozďátky) were studied and three distinct morphological types were recognized. (i) The most abundant black, prismatic tourmaline (up to 3 cm) occurs in the blocky zone at all localities (Klučov, Terůvky, Pozďátky). (ii) Graphic intergrowths with quartz (in the block zone) and (iii) lath-shaped crystals in the albitized block zone occur only at Klučov. In the BSE image, tourmaline looks relatively homogenous, occasionally with Al-enriched rims, only lath-shaped tourmaline (iii) shows patchy zoning and encloses grains of quartz, feldspar, ilmenite and Ca, REE phosphate. Electron microprobe data were recalculated on bases of 31 anions, contents of B_2O_3 and H_2O were determined by stoichiometry, B = 3, OH+F = 4.

Prismatic tourmaline (i): the X-site is characterized by high content of Ca (up to 0.40 *apfu*) and low vacancy (<0.2 *pfu*). High Fe up to 2.08 *apfu* and Mg up to 2.17 *apfu* are dominant in the Y-site, but high contents of Ti (up to 0.42 *apfu*) were also recorded. Al_{tot} is commonly <6, hence Mg (and/or Fe^{3+}) enter the Z-site (<0.95 *apfu*).

Tourmaline from graphic intergrowths (ii): the X-site is mainly occupied by Na (0.61–0.79 *apfu*), content of Ca is minor (< 0.09 *apfu*). In the Y-site, Fe prevails (1.59–2.94 apfu), the contents of Mg and Ti are negligible (0.07–0.12 and 0.08–0.13 *apfu*, respectively), Mn varies from 0.11 to 0.43 *apfu*, ^{Y}Al ranges from 0.02 to 0.66 *apfu*. The Z-site is completely filled by Al.

Lath-shaped tourmaline (iii) has similar composition to that of prismatic tourmaline, differing only in higher contents of Fe (2.37–3.15 *apfu*) and lower amounts of Ca (0.10–0.17 *apfu*).

The pegmatites of the Třebíč durbachite massif with minor tourmaline represent a rare example of the NYF pegmatites. (i) Prismatic Al-poor and Ti-rich tourmaline (Fe-rich dravite to Mg-rich schorl) has the chemical composition different from that of other black tourmalines from Moldanubian pegmatites. (ii) Tourmaline in graphic intergrowths (schorl) is more evolved than the prismatic one, and is characterized by higher amounts of Al, Fe, Mn and low content of Mg. (iii) Lath-shaped tourmaline from albite is probably formed by replacement of biotite during hydrothermal stage.

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Neoproterozoic Metaconglomerates of the Sedlčany–Krásná Hora Metamorphic Islet

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Several metamorphic complexes represent roof pendants of the Central Bohemian Pluton (CPB) at the boundary of the Teplá–Barrandian Zone and the Moldanubian Zone of the Bohemian Massif. The largest metamorphic complex, the Sedlčany–Krásná Hora metamorphic "Islet" (SK) contains almost complete sedimentary record from the Neoproterozoic to the Middle Devonian (Chlupáč, 1989). The succession of the SK Islet consists of Neoproterozoic (meta)volcanosedimentary unit (the Svrchnice Formation; Chlupáč, 1989) which is unconformably overlain by the Early Palaeozoic sequences (Ordovician to Devonian). These rocks are often correlated with similar rocks in other parts of the Teplá–Barrandian Unit, but they also differ in their facies development, thickness and volume of volcanic rocks present (Chlupáč, 1989; Kachlík, 1992). Except for a weak Cadomian deformation of the Svrchnice Formation, all units in the region underwent a strong Variscan dynamothermal overprint (Kachlík, 1992) associated with the emplacement of intrusions now forming the CBP. The Svrchnice Formation of the SK Islet contains siliciclastic flysch deposits in thicknesses of several hundreds of metres. Laminated meta-siltstones and mudstones alternate with metagreywackes, with subordinate conglomerate intercalations (Vletice Conglomerate; Chlupáč, 1989) at several structural levels. The bimodal (sub)volcanic rocks of island-arc affinity are scarcely preserved (Kachlík et al., 2000; Vítková and Kachlík, 2001).

In this study we have attempted to constrain the sedimentary sources of the Neoproterozoic Svrchnice Formation using petrographic composition of the pebbles and their matrix and