The results lead us to the hypothesis on the emplacement of the igneous massif. The rise of the older granitic pluton was supposedly enhanced by extensional tectonics. Re-activation of this unstable system enabled intrusion of the granodioritic stock that began in its NE part and then continued the motion even after the normal fault had evolved into an oblique sinistral strike-slip producing an ellipsoidal shape of the body.

POLYPHASE DEFORMATION - METAMORPHISM EVOLUTION OF THE KAPLICE UNIT IN THE NW ROOF DOMAIN OF THE MOLDANUBIAN PLUTON

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The Kaplice unit, comprising muscovite-biotite paragneisses with quartzite and calc-silicate intercalations forms the NW roof of the Moldanubian pluton between Linz and Ceske Budejovice. This part of southern Bohemia is now completely covered by printed 1:25.000 geological maps. The unit trending NE-SW, 50 km long and up to 10 km wide, is continuously in intrusive contact with the Eisgarn type ("Mrakotin variety") Ms-Bt granite of the underlying Moldanubian pluton. In NW the Kaplice unit is structurally overlain by sillimanite-cordierite-biotite-paragneiss of the Monotonous unit. The Kaplice unit represents the most remarkable example of muscovite-rich gneisses in the interior of Moldanubicum compact (metagreywacke) varieties contain about 5 vol.% Ms, schistose varieties (similar to mica schists) carry up to 30 vol.% muscovite. Owing to high Ms, Bt and Qtz contents, the gneisses reacted readily via pressure solution and fabric reorientation to successive, contrasting stress patterns and record a series of successive deformation - recrystallisation events. The regional structural and petrological analyses shows rather coherent, regular record of successive events.

1. The following aspects make the structural member of the polycomponent crustal stack of southern Bohemia
2. A comparable complex structural pattern is unknown in most Ms-free gneisses in Moldanubicum
3. Late deformation events (D4, in part D3?) represent regionally significant crustal extension associated with emplacement of the Moldanubian Pluton.

Four major deformation - recrystallisation events in amphibolite facies are characterized by geometry of the structures as successive, superimposed deformations. Several hundred meters long zone of kyanite-quartz segregation lenses near Lipno dam, that developed parallel to the late, NW-dipping regional shear foliation S3, shows transformations Ky> And, Ky >Sill (Ky > Ms) including coexistence of three Al_2SiO_5 polymorphs in a single sample. Adjacent to the pluton the following sequence of mineral phases is documented: staurolite > andalusite, sillimanite,

cordierite. A low frequency of garnet having a low Grs and Prp content is in line with the prevalence of late, low-P mineral assemblages in the Kaplice unit.

BARTEK, J. (1979); The regional metamorphism of the Kaplice series. - Postgradual thesis, p.169; Czech Geological Survey, Prague (in Czech, unpublished).
VRANA, S. (1979): Polyphase shear folding and thrusting in the Moldanubicum of southern Bohemia - Bull.Geol.Survey Prague 54, 75 - 86.

CONJUGATE SHEAR ZONES IN THE SOUTHERN BOHEMIAN MASSIF: KINEMATICS DURING DUCTILE AND BRITTLE BEHAVIOUR

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Mylonitic fabrics which developed in wrench fault systems of the Southern Bohemian Massif display dextral shear sense in the NW-SE striking systems and sinistral shear sense in NE-SW trending systems. Ductile fabric elements were studied in both systems.
In the Danube Shear Zone (along the Danube between Eferding and Passau) diatexites and metablastites are ductilely deformed into protomylonites. A mylonitic foliation dips steeply NNE to NE, and an almost horizontal stretching lineation in the direction of strike is well penetrative. Mesoscopic and microscopic S-C fabrics and shear bands indicate a dextral shear sense. X-ray textural goniometer analyses of quartz fabrics in (xz)-sections show that the c-axes are arranged in dextrally oblique girdle distributions. The a-axes form a cluster distribution in the S-direction of the S-C fabric. Temperatures cannot have exceeded those of greenschist metamorphism because the feldspar porphyroclasts are brittlely deformed.

In the Pfahl Shear Zone (parallel to the Danube shear Zone in the Mühl Valley), protomylonites derived from a granite or orthogneiss-protolith (Weinsberg Granite, Eisgarn Granite, and "Grobkorn Gneis") are most common along the shear zone margins. Towards the centre of the shear zone, mylonites and ultramylonites are developed. Ductil shear bands, asymmetric pressure shadows, and antithetic "book shelf" structures indicate dextral shear. X-ray textural goniometer analyses of the quartz fabric from marginal parts of the shear zone show similar patterns as in the Danube Shear Zone. In the centre of the Pfahl Shear Zone, however, a prism-c-glide system was activated. This means that temperatures exceeded 700 °C, and that hydrous conditions existed.

In the NE-SW trending Rodl Shear Zone (located in the Rodl Valley) mylonitization and phyllonitization affected a variety of protoliths (Pearl Gneiss, Pearl Diatexite,