Gneiss, led to massive formation of sheet silicates. As the growth of the micas is believed to be related to the Moravian Overtrust, $^{40}Ar/^{39}Ar$ age dating of the micas was attempted to estimate the age of thrusting. Chlorine was detected by massspectroscopic methods in the micas. This suggests that these rocks may have been affected by percolating brines, which also have led to the decomposition of potassium feldspar and Al-silicates. A saline horizon located in the region of the Moravian overthrust is possibly responsible for the formation of these brines.

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LATE-OROGENIC SINISTRAL SHEAR ZONE AT THE NE MARGIN OF THE BOHEMIAN MASSIF

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The eastern margin of the Bohemian Massif corresponds to a ductile NW-dipping shear zone characterized by NE direction of tectonic transport (RAJILICH, 1987). The zone, covered by sediments, continues supposedly in the NE corner of the massif, eastwards of the Góry Sowie gneissic block (Fig. 1). In this area, the eastern margin of the Bohemian Massif consists of a few metamorphic/igneous complexes cropping out to the east and south-east of the Góry Sowie gneisses. These are: the Niemcza Zone, the Niemcza-Kamieniec metamorphic complex and the Doboszowice metamorphic complex (Fig. 1).

The **Niemcza Zone** consists of mylonitized gneisses of the Góry Sowie Block with minor ultrabasites, amphibolites and quartz-graphite schists. The mylonites are intruded by numerous small dikes and veins of late- to post-tectonic granodiorites and quartz diorites or quartz syenites. The mylonitic mineral assemblages are of both high- and low-temperature type. The high-temperature assemblage contains biotite and fibrolitic sillimanite. Chlorite and muscovite are typical of the low temperature one.

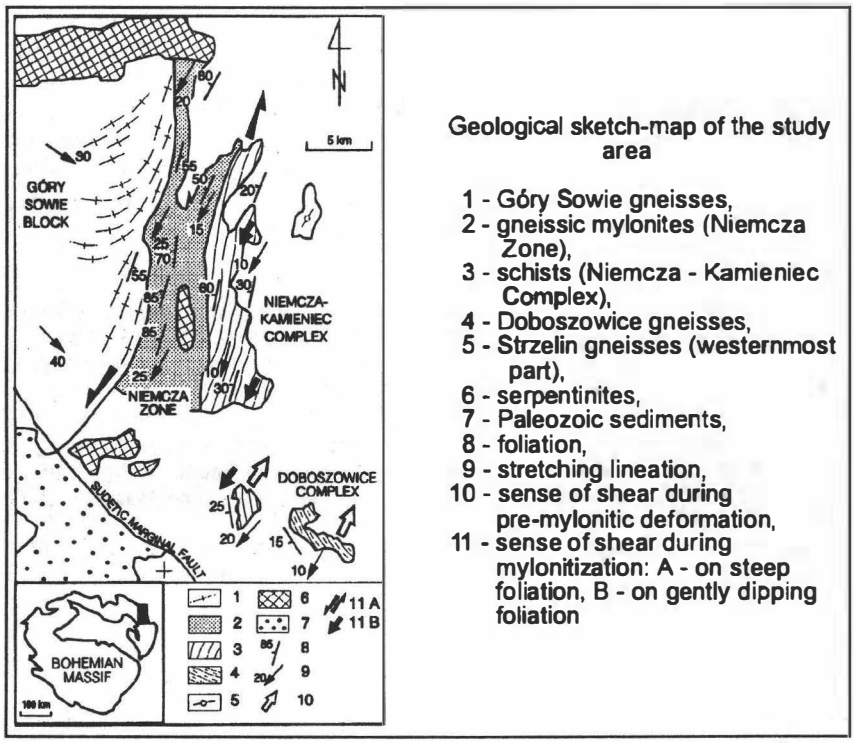

Fig. 1: Geological sketch-map of the investigated area

The mica schists of the **Niemcza-Kamieniec complex** (Fig. 1) are strongly mylonitized in its northern part located immediately eastwards of the Niemcza Zone. In the southern part of the complex the zones of mylonitic schists alternate with nonmylonitized rocks. Along the contact with gneissic mylonites of the Niemcza Zone, there occurs a relatively thin layer of semi-pelitic schists intercalated with quartzofeldspathic schists. Much thicker layer of pelitic schists occurs further to the east. The pelitic mica schists were subjected to relatively high-pressure (i.e. kyanite) metamorphic event followed by the staurolite-grade metamorphism. The mylonitization in the northern part of the complex took place under low-grade conditions. The western part of the **Doboszowice metamorphic complex** is formed of a strongly deformed granitic pluton. In the east there occur paragneisses with intercalations of amphibolites (Fig. 1). The deformed granite is leucocratic. Its chemical composition is constant, whereas the texture is highly variable ranging from coarse-grained augen-gneiss to fine-grained mylonitic varieties. The paragneiss consists of muscovite, biotite, quartz, oligoclase, K-feldspar plus subordinate garnet and sparse kyanite. Locally, a migmatitic structure is visible. The metamorphic history of the paragneiss comprises relatively high-pressure (kyanite) event, followed by high-temperature one (K-feldspar, migmatization). The last metamorphism of the paragneiss (muscovite) affected also the neighboring granitic pluton and took place under conditions transitional between those of greenschist and amphibolite facies.

The fabric of mylonites in the Niemcza Zone is characterized by a NNE-SSW stretching lineation on the steep west-dipping foliation planes (Fig. 1). The lineation is subhorizontal or dips gently to SW. Kinematic indicators demonstrate a consistent sinistral sense of shear. The mylonitized schists of the Niemcza-Kamieniec Complex display a top to SSW sense of shear (on the foliation dipping gently to WNW) compatible with a sinistral movement in the Niemcza Zone. The fabric related to an earlier top to NNE displacement is locally preserved in the non-mylonitized schists of the S part of the complex. The same NNE-directed sense of shear (on subhorizontal foliation) is well-defined in the Doboszowice Complex (Fig. 1). Generally the pre-mylonitic fabric of rocks east of the Niemcza Zone indicates the NNE direction of tectonic transport characteristic of E margin of the Bohemian Massif.

The Niemcza Zone developed due to a large-scale sinistral displacement between the Góry Sowie Block with "sudetic" WNW-ESE stretching lineation and the area to the east characterized by NNE-SSW lineation. It resembles the sinistral NNE-SSW trending strike-slip faults in the SE part of the Massif (BRANDMAYR, et al. in press). The development of the Niemcza Zone post-dated the phase of NE-directed displacements interpreted to reflect kinematics of nappe stacking. It may be related to the late-orogenic modification of the previously thickened crust.

THE ALPS - A VARISCAN STRUCTURE BETWEEN GONDWANA AND LAURASIA

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The cross-section of the pre-Mesozoic basement in the Alps includes a major suture between Gondwana and Laurasia, a highly condensed (through Alpine events) cross-section through the Variscan fold belt, where early rifting was followed by crustal shortening comprising subduction, obduction and collision. The Late Variscan evolution is dominated by post-collisional collapse, strike-slip and exhumation.

Following von RAUMER & NEUBAUER (1993), in the long-lasting geological evolution, several main stages should be differentiated. There is no doubt, that oldest elements have preserved a Cadomian/pan-African type of evolution, thus representing relics of an older metamorphic crust. They underwent, during the Late Proterozoic and/or the Early Palaeozoic, rifting with formation of sedimentary troughs containing volcanics, and at many places relics of oceanic crust were recognized. The latter may indicate the existence of at least one or several oceanic sutures, the former width of which cannot yet be evaluated. They are mainly concentrated on the Alpine Pennine Realm and the adjacent areas and, in consequence, the question