Now we have started to investigate a southerly situated cross section, which is running from Monotonous unit in the west, across the body of Rastenberg granodiorite, Dobra orthogneiss, Varied unit, Gfohl unit and a body of felsic granulite, which is enveloped by amphibolites. Than the cross section continues to the east over the Gfohl and Varied units again and it ends on the border of Brunovistulian. The dominant foliation in the western part of the cross section is dipping to the E or SE under intermediate angles and lineatinons dipping in the SE to S-direction. This fabric contains relics of a subvertical foliation of N-S direction. The eastern part contains structures of opposite direction. The foliatins in the body of felsic granulite, which is in the centre of this fan-like structure, are relatively flat and are dipping to the south in the northern part of the body and to the north in the southern part. The lineations in the granulite are subhorizontal and have W-E direction. The aim of this investigation is to understand the structural evolution of this area, to correlate it with the metamorphic history and to resolve the emplacement of the granulitic body with evidently discordant structural characteristics correspondingly to the surrounding units.

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Thrust Tectonics in the Southern Part of the Moravian Karst

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The Moravian Karst is a terrain made up from a carbonate complex of Devonian to Carboniferous age (Eifelian to Vis?n) and represents carbonate ramp sedimentation to sedimentation from calciturbidites. Thrust tectonics was recognized by Kettner (1949), but a long time prevailed fixistic interpretations of structures observed (e.g. Dvo?k, Pt?, 1963). Recently thrust conception was revived by Hladil (1991), but many problems have remained. This contribution tries to explain the deformation history of the southern part of Moravian Karst using the best exposed and well investigated region of Mokr quarries as a model.

The rocks found in the vicinity of Mokr quarries are represented by the Vil?ovice Limestones (Givetian-Frasnian, light grey, massive) and the K?iny and ??ka Limestones (Famenian-Visean, dark grey, well bedded). These limestones are folded in two systems of folds, the older one oriented NNW–SSE is refolded by the younger system of ENE–WSW direction (Fig. 1a). The folds are asymmetric and mostly recumbent. Limestones are also affected by brittle fracturing of several generations as well as ductile to brittle-ductile failures (en echelon arrays of carbonate veins, ductile shear zones accompanied by pressure solution, etc.).

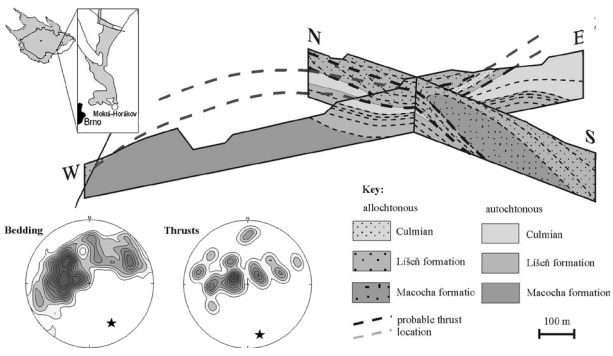

Fig. 1. Schematical cross- section through Mokr -quarries suggesting localisation and refolding of the main thrust zones and their obliquity to footwall and basic structural plots.

The most important structures observed are, however, thrust faults subparallel to bedding the cores of which are marked by a black ultracataclasite layer. These thrusts originated in the end of the older phase of folding because they were folded together with the bedding and their fold axes are in the same direction. These thrusts were refolded in a younger system of folds as well (Fig. 1). Stereographic projections on figure 1 suggest together with field observations, that the thrust planes are oblique to bedding planes (the angle between mean thrust plane and bedding plane is about 18?). This explains the localisation of thrust planes in various stratigraphical levels in different places of the quarries. It seems that the thrust planes climb up from west to east within the bedrock (Fig. 1). The hanging wall rocks seem to be always the same, lower Tournasian nodular K?iny limestones. Based on several striations recognized on the thrust planes the NE displacement direction could be suggested. In some places these thrusts are masked by younger, more brittle faults.

Combination of the precise stratigraphic and structural data allows us to interpret the 3D tectonics of the area as an anticline the axis of which dips to the SE with the dip of 21?. The deformation phases are as follows: D1 – the first phase of folding oriented NNW–SSE; D2 – thrusting in terminal phases of folding D1 subparallel to bedding planes with NE displacement direction; D3 – folding with fold axes oriented ENE–WSW; D4 – several phases of younger (Alpine?) fracturing.

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