

In the region of Bohemian Cretaceous Basin can be found some springs with specific yield over 100 l/s. The doyen of Czech hydrogeology Prof. Hynie described some of those springs to be of karst origin and as the most permeable area he described the so-called transitional facies between shallow-water sandstones and deep-water marlstones. Possibilities of karstification have not yet been studied for rocks in the BCB, so the origin of well-permeable pathways in the BCB is a subject of speculations. This thesis deals with the question of which sedimentary rocks potentially allow the generation of karst permeability in the BCB. To do so, rock samples drilled from outcrops in the BCB were subjected to a fast dissolution simulation by leaching in hydrochloric acid. Carbonate content is measured by a standard and one's own method. Mineral composition, grain size and microscopic structure of rocks are studied with SEM. As is shown, the border of rock karstification is not defined just by the carbonate content, but also the grain size, rock structure and by the occurrence of fine secondary silicate content. Concerning the amount of dissolvable compounds, the border of total disintegration can be at 30 % of carbonate content for some rocks, but the most resistant rocks (mostly fine rocks with SiO<sub>2</sub> matrix) stay intact even at 80% carbonate content. The thesis has shown, that it is not possible to be able to estimate just from the carbonate content, whether the rock material will disintegrate due to dissolution of its carbonate content and thus allow generation of karst channel. In some location it seems, that the material disintegration and generation of karst channels is limited to the occurrence of tectonically altered zones. The thesis meets karst in the proximity of Turnov, isolated cases of enlarged porosity were discovered in most of the visited locations. Karst permeability can be ruled out in the A2 aquifer of the Police basin.