8 Abstract

The Natural Vegetation of Bohemian Switzerland and its changes as an impact of habitation and forest management

Vegetation development was studied by pollen analysis on two cores from Bohemian Switzerland, in the northern part of the Czech Republic. The first site 'Nad Dolským Mlýnem', situated in the peripheral populated deforested part, reflects natural development during the Atlantic (^{14}C age 6030±40 BP), the Subatlantic (^{14}C age 1630±30 BP) and probably up to Late Medieval times. Due to the sedimentation hiatus, formed by fire in the peat bog, the gradual decline and degradation of hazel-oak mixed forest, together with expansion of fir-beech forest, which occured around 3000 BP (POKORNÝ & KUNEŠ 2005), are hardly visible. This was accompanied by irreversible geochemical changes which resulted in the acid soil conditions of today's sandstones (LOŽEK 1998).

Several periods of colonization had affected the region. However, the most significant one is the last from the Baroque period. With the settlement of the village Kamenická Stráň in 1614, which is 200 meters far from the coring site, an increase of anthropogenic indicators (for example: Cerealia undif. 3→10%), NAP and Pinus from plantations was recorded in the diagram.

The second site 'Pryskyřičný důl', situted in the central part of continually-inhabited Bohemian Switzerland, reflects forest composition since 1630. Samples of high resolution pollen analysis with spacing of 2 cm were dated using a depth age model constructed upon ^{14}C and ^{210}Pb dating. Sample-ages follow intervals of around 12 years. The existence of fir-beech forests ended around 1720 due to forest management. Charcoal peak, discovered kiln sites and timber lodge, dated by a forest map from 1795, confirm presence of 100 years of charcoal burning activity really close to the core. Vegetation cover, deforested to heaths along with open woodland, was easily cut up by windbreaks in the winter of 1833/4. Large clearings were reforested with spruce and northamerican tree species. Results of pollen analysis fit the historical data.

Correlation of log-transformed abundances from historical data within a radius of 600 meters with log-transformed pollen types was significant for *Abies*, *Betula* and NAP. Different pollen abundances related to pollen production (POHL 1937) are discussed together with falling velocity (DYAKOWSKA 1936) and vegetation cover from forestry data.