

ABSTRACT

This Ph.D. thesis presents new facts about a paleoenvironmental development of the northern part of the Bohemian Forest (area of Černé Lake and Čertovo Lake) in the Late Pleistocene and Early Holocene. The main goals of the research are: characterize the glacier landforms in the Bohemian Forest and define the variance of these landforms; determine factors influencing formation and development of the glaciation in the study area; describe environmental settings and its changes during deglaciation and in Early Holocene by using environmental proxies. This research proceeds from original data obtained by geomorphological mapping, morphometric analysis and proxy data analyses originated from a sediment sequence in a peat bog in the Černé Lake vicinity. The common attributes of the Bohemian Forest cirques and cirque variability was determined using morphometric and morphologic characteristics of the cirques on the Bavarian and Czech side of the mountain range. These characteristics were compared with other cirques of the Bohemian Massif and other chosen mountain ranges of the world. The cirque overdeepening was defined on the basis of headwall shapes and it emerged that overdeepening of the cirques in the Bavarian Forest and in the High Sudetes reflects a different extent of the Pleistocene glaciation. The glacier formation and development were influenced by a combination of factors but any did not dominate. It was emerged that the glaciation of the Černé Lake area and Čertovo Lake area was strongly influenced by slope aspect of the glacial segment of the relief strengthen by differences in the deflation plateau area. The different extent of the glaciation in the Černé Lake and Čertovo Lake was determined by geomorphological mapping of the glacial landforms, its morphometric and morphological characteristics. It emerged that the sedimentary record from the lateral moraines of the Černé Lake comprises 17.5 kyr of the environmental evolution and it is possible to correlate the proxy data (LOI, MS, Rb, grain size, pollen) with record not only in other localities in the Bohemian Forest but also with the record from the Greenland ice core.

Keywords: Pleistocene glaciation, cirque morphometry, glacial sediments, paleoenvironmental evolution, Černé Lake, Čertovo Lake, the Bohemian Forest