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The use of bioindicative values of plants in paleoclimatic and paleoecological interpretations

Abstract

The first article focuses on identifying the interaction of environmental/climate factors affecting the disappearance of the *Trapa natans* plant (kotewka orzech wodny) in north-eastern Poland in the context of its ecological requirements. The main aim of the research was to determine the interaction of paleoenvironmental factors based on the bioindicative values of plants identified in biogenic sediments in the late glacial and holocene periods. The work focused on tracking climatic changes affecting the evolution of reservoirs in the regional and local context and reconstructing the succession of vegetation based on bioindicating species. Macroremain analyses were used for the research high-resolution and palynological and geochemical analyses of organic sediment cores, supported by radiocarbon dating by accelerator mass spectrometry.

The first article focuses on determining the causes of the disappearance of the *Trapa natans* plant (kotewka orzech wodny) in north-eastern Poland. A high-resolution analysis of plant macroremains was carried out, supported by geochemical analysis. On this basis, the paleoecological conditions of the development of the *T. natans* population were reconstructed and the reasons for its decline in the late Holocene were investigated. In the second article, the research focused on determining the environmental conditions indicated by the appearance of *Lobelia dortmann* (lobelia jeziorna) in it, as well as the causes and time of coexistence with *Cladium mariscus* (kłóc wiechowata), a different species in terms of ecological requirements. In the third article, the initial age of lake development was determined and, based on the presence of bioindicating taxa, local and regional plant succession, as well as environmental conditions at the initial stage of lake and peat bog development, were reconstructed.