Eemian environmental changes recorded in the north located lakes (N Poland and Germany) - subfossil Cladocera data

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In the current study the result of subfossil Cladocera analysis of the lake sediments from tree sites: Hinterste Mühle (H-M) (NE Germany), Rzecino (NW Poland) and Łęczyce (N Poland) of the Eemian Interglacial and the inferred environmental alterations are presented. The aim of the study was to reconstruct and compare the development of Eemian lakes located within the north of Poland and Germany as determined on the basis of the changes in subfossil Cladocera composition in the context of local conditions, climate change and natural evolutionary processes.

The studied reservoirs, fully developed during the Eemian Interglacial, were formed at the end of Late Saalian (MIS 6) and Early Eemian. The Hinterste Mühle profile is located in Mecklenburg-Western Pomerania. The site lies in the southeastern edge of the gravel pit, at about 48 m a.s.l. The Rzecino paleolake is located in the West Pomerania Lakeland (NW Poland), at an elevation of 104.5 m a.s.l. The Łęczyce palaeolake is located in northern Poland, on the northern slope of the Łeba river valley.

The subfossil Cladocera fauna from the H-M palaeolake is represented by 14 species belonging to three families. Three of them belong to a benthic group inhabiting mainly the bottom sediments, one to the open water zone, while the remaining species the dominant group occur among aquatic plants. Such a species composition marks a shallow water body or the littoral, macrophyte zone of a deeper lake. The Cladoceran fauna of deposits from the Rzecino paleolake are represented by 22 species that belong to four families. The majority of the remains consist of Chydroridae and Bosminidae. In the deposits, the ephippial eggs of the Daphnia longispina group, Ceriodaphnia spp., Chydorus spp., and Bosmina spp. are also identified. The subfossil cladoceran fauna of sediments in the Łęczyce profile is represented by 18 species that belong to four families. Most of the remains belong to the family of Chydroridae (13). Such species composition points to a deeper reservoir with a developed littoral zone with macrophytes.

Summing up, a similar pattern was observed in the research paleolakes related to the beginning of
the existing of the lakes, their full development and ending time, different from the paleolakes found in the south, related to the location and more intense contact with cool air masses from Northern Europe.