SUMMARY

Why anthropogenic lake Zakrzówek is worth of study and protection?

Lake Zakrzówek is located in the southern part of Cracow (50°02'20" N, 19°54'35" E). It originated in a former limestone quarry, which was exploited till 1991. The floor of quarry reached a depth of about 30 m below the water level in the channel of the Vistula, which flows in the distance of about 600–900 m. Filling with water started in 1992 after the cessation of quarry drying and the level of local ground water table was reached in 1997. Since this abandoned quarry was filled with riverine water polluted by saline mine waters from the Silesian mines, high chloride concentrations (>280 mg L^{-1}) were observed at that time. Then gradual freshening of the water started, due to the exclusive feeding with water from atmospheric precipitation. Now the Zakrzówek is a meromictic lake with oligotrophic epilimnion extending down to 18–20 m and anoxic and highly mineralized monimolimnion.

The data on the biota of the lake are very scarce. They comprise a study on vertical distribution and species composition of zooplankton and a MSc thesis describing thermal preference of *Asellus aquaticus* inhabiting 12–20 m depth zone. These sources are completed with a poor set of unpublished data. None is known about phytoplankton and fish. Peculiar morphometry of this lake, characterized by steep rocky walls falling down to the depth of 30–32 m may pose some difficulties to hydrobiological studies. In general, research projects need the scuba diver assistance who should operate special equipment for taking samples from selected microhabitats or depths, e.g. by sucking benthic invertebrates.

Despite these methodical problems lake Zakrzówek has some advantages as an area of hydrobiological research, the relatively rare meromictic conditions and the close proximity to research centers being the most obvious. This lake is also of great importance to the local community as a high quality recreational space and it is a hot-spot of biotic diversity of the Cracow urban area.