DESCRIPTION FOR THE GENERAL PUBLIC

Increasing number of cercarial dermatitis from year to year, as well as alarming data on bird schistosomes migration in mammalian body leads scientists to undertake study concerning methods that may eliminate the risk, especially in recreational water bodies. Removal of freshwater snails and waterfowl (hosts of bird schistosomes) creates a problem and gives limited positive effects. Whereas chemical methods such as the use of molluscicides may have a dangerous impact on local fauna. Four basic groups of organisms have been proposed for biological control for human schistosomes in some areas for the control of host snails (source of invasive larvae): pathogens, parasites, predators, and competitors. Research on pathogens and parasites were stopped at the laboratory stage. Positive results for field research were received for the phenomenon of competition between snail hosts and alien or even invasive snails. The effect of the removal of host snails by competitors, as well as limited precision of miracidia transmission to hosts have been the inspiration for the planned studies on the impact of alien snail species, which does not have influence on native molluscs, but it will prevent the transmission of parasites, because it plays the role of „dead-end hosts". The main objective of the planned research is to check whether the presence of *Potamopyrgus antipodarum* (Gray, 1843) in recreational water bodies can be natural protection against swimmers' itch. In the planned project we hypothesize that *P. antipodarum* constitutes natural protection against swimmers' itch, because the sympatrtic presence of non–host snail populations (*P. antipodarum*) with host snail populations (Lymnaeidae) demonstrates the capacity of incompatible snail species to interfere with the transmission of bird schistosome miracidia. Moreover we assume that *P. antipodarum* is not the source of invasive cercariae of bird schistosomes for vertebrate host. Field research will be conducted for three growing seasons on lakes from two Polish Lake District. Two lakes populated by Lymnaeidae together with *P. antipodarum* and two lakes without *P. antipodarum* will be designated from both Lake District. The field research tasks will include quantitative collection of molluscs, as well as collection of snails for comparative parasitological studies. In the laboratory we will determine the systematic affiliation of the collected snails and also we will count all snails from quantitative trials. Individuals for parasitological diagnosis will be subjected to preliminary examination, in order to verify the presence of patent invasions, and subsequently we will do autopsies in which we will search for sporocysts and/or rediae, immature cercariae, as well as metacercariae of Diganea. Laboratory tests will include three experiments: i.) experimental infection of *Lymnaea stagnalis* with miracidia of *Trichobilharzia szidati* in the presence of different density of *P. antipodarum* individuals, ii.) experimental infection of *P. antipodarum* by miracidia of *T. szidati*, and iii.) quantitative rating for miracidial chemotactic swimming behaviour (*T. szidati* and *T. regenti*) in water conditioned by *P. antipodarum* and snails belonging to Lymnaeidae. So far, scientists have not conducted research about influence of sympatrtic presence of non–host snail populations on the dilution effect of the first larval stage of digenetic trematodes. The common occurrence of snails emitting *Trichobilharzia* spp. cercariae, and the presence of numerous water birds, as well as frequent cases of persistently itchy rashes in people (most frequently in children) along with a number of additional symptoms and the lack of clear data on the fate of cercariae inside human body is a sufficiently strong argument for basic research about biological possibilities of disturbing the life cycle of bird schistosomes. Positive verification of hypotheses in the planned project will serve to prevention plans of swimmers' itch in recreational waters. Dissemination of the results during scientific conferences, and their publication to the Journal Citation Reports help to publicize the problem of potentially dangerous human parasites. Increasing the people's knowledge about avian schistosome may lead to the inclusion of studies of snails host to the standard screening procedures in the bathing areas.