

Crustacean species as a source of infection of Baltic cod (*Gadus morhua*) with intestinal helminths

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In the Baltic Sea along the Polish coast, about 56 species representatives of malacostracan Crustacea can be found. Invertebrates are important components of the diet of many fish species. They may also be indicated as the vectors of fish infection with parasites, for example as intermediate hosts in the life cycles of nematodes or acanthocephalans. Cod (*Gadus morhua*) is an important fish species in the Baltic Sea from an ecological and economical point of view. Cod changes its food preferences during its life time. Young cod feed mostly on invertebrates, while older and larger individuals prey upon fish and large invertebrates. Cod feed at various depths and distances from the coast, characterized by disparate composition of invertebrate species. The presence of parasites in cod and their general life cycles are well documented. The most abundant groups of intestinal parasites in cod from the Baltic Sea are nematodes and acanthocephalans. Invertebrates are an important vector of fish infection with parasites. Several species of crustaceans are regarded as intermediate hosts for nematodes and acanthocephalans, but the presence of parasites in organisms within the diet of cod (*in situ*) has not been analyzed.

The aim of this pilot study was to determine the prevalence and intensity of infection with parasites in invertebrates present in the diet of cod. The research material consisted of the stomach of Baltic cod collected during research cruises on the Southern Baltic in February and November 2013. Food content was determined and any collected invertebrates were stored for further parasitological analysis. The most abundant invertebrate species that occurred in the stomach of cod were *Saduria entomon*, *Crangon crangon*, *Pontoporeia femorata* and *Gammarus* sp. Parasitological analysis of invertebrates revealed the presence of *Hysterothylacium* sp. and *Echynorhynchus gadi* (both at larval stages) in *P. femorata* and *C. crangon*. This indicates that *C. crangon* and *P. femorata* act as intermediate hosts in the life cycles of these parasites in the southern Baltic Sea. Invertebrates infected with parasites were most frequently noted in the central and western coast of the Polish EEZ.