

Preface

Currently, more than a hundred species are known as man introduced into the Baltic. Among them are organisms living in bottom and littoral habitats and those occupying pelagic zone, there are a few parasites, also. Taxonomically introduced species belong to collection of different taxa. There are plants (algae and vascular plants), Coelenterata, Mollusca, Annelida, Crustacea, fish and some species belonging to the other taxonomic groups. Introduced species live in diverse habitats. Some of them are common in the whole Baltic, whereas the others occur only in specific regions.

Man has introduced new species into the Baltic from numerous geographically far regions. New species were mainly introduced by shipping (predominately in ballast waters), intentionally for stocking and other purposes and in association with aquaculture. Importance of each transport vector varies depending on species origin, but in each case shipping is one of the most significant.

Growing knowledge of non-indigenous species introductions and their interactions in the Baltic Sea environment let to organize the conference "Baltic – the Sea of Aliens" which took place in Gdynia from 25 to 27 of August 2004. The conference was organized by Institute of Oceanography, University of Gdańsk and Center of Excellence for Baltic Development, Education and Research – BALTDER. 60 scientists from 13 countries participated in that meeting. 24 lectures and 23 posters were presented and discussed during that conference.

The 2004 was the year of a 20th anniversary of the Erkki Leppäkoski's publication: Leppäkoski, E., 1984. Introduced species in the Baltic Sea and its coastal ecosystems. *Ophelia* Suppl. 3: 123-135, where he for the first time pointed out that introduced species may pose a threat to the Baltic Sea environment. This was a pioneering work for that time not only for the Baltic Sea, but also probably for the whole northern and central Europe.

10 years later, in 1994 the Baltic Marine Biologists Working Group Non-indigenous Estuarine and Marine Organisms was established to coordinate exchange of knowledge of alien species in the Baltic Sea.

After years of investigations we know that case of each introduction is different. Each species has its own biological features promoting invasion. Most probably a lot of foreign species is introduced deliberately into the Baltic every year, but invasion of only a small part of them succeeds.

Humans can change the physical conditions of the environment and these are either global, for example climate warming, or local, such as altered water chemistry, sea bottom shape or local sea current profiles. Human activities can also significantly change the structure of the biocenosis thus creating new,

empty ecological niches and decreasing the pressure of autochthonous components of the biocenosis on newly introduced species.

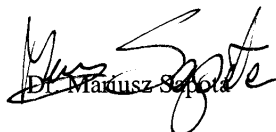
The transport of representatives of a particular species to new areas is usually accidental. The fate of these newly introduced organisms depends on their adaptive abilities and the environmental conditions with which the organism must deal.

Some invasions are interesting from scientific point of view, the others are very important economically, can pose treat for functioning of invaded ecosystem and involve big financial loses. Consequences of many species introduction are still unknown.

This book presents some contributions presented during the conference, dealing with various aspects of biological invasions in the Baltic.

We hope that growing interest of scientific society will result in better describing of problems connected with invasions of the non-indigenous species into the Baltic, their biological and ecological consequences and economical impacts.

Once more we would like to be grateful all participants for their coming and excellent work during the conference. With hope that presented papers will importantly improved knowledge about important aspects of biological invasions in the Baltic.


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