

Preliminary data on the parasitofauna of seals (Carnivora: Phocidae) from the Baltic Sea

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The parasitofauna of pinnipeds has been fragmentarily and unevenly studied. In particular, complex studies including all ecological and systematic groups of the parasitic Metazoa are missing. This data on seals from the Baltic Sea is even scarcer, as the conducted studies have been sporadic, typically including singular individuals and selected parasites. Here, nematodes of the Anisakidae family, specific for marine mammals have been found, with lower amount of information available for the occurrence of flukes, tapeworms, acanthocephalans or parasitic arthropods. The present parasite records do not reflect the scale of their actual distribution and importance for the seal population - no basic data is available on the composition of seal parasite communities, their synhospitalic occurrence, level and dynamics of infestation, and pathogenicity.

The present study included 57 seals from Baltic Sea, including 55 grey seals *Halichoerus grypus* and 2 harbor seals *Phoca vitulina*. These were individuals originating from accidental bycatches or found dead on the shore. The seals were subject to detailed parasitological dissections using preparation methods adequate to individual ecto-, meso- and endoparasite groups.

Preliminary examinations allowed to detect helminths representing tapeworms of the genus *Diphyllobothrium* = *Pyramicocephalus*, nematodes from the genus *Contracaecum*, acanthocephalans *Corynosoma* spp., and not determined fluke Digenea. The arthropods determined in both seal species included *Echinophthirus horridus* lice and parasitic mites of the airways – Halarachne halichoeri; furthermore, a specific mite was found for the harbor seal – *Demodex phocidi*, previously known from a sole record from the USA. In turn, a possible new species, *Demodex* sp., was found in *H. grypus*. Forming comprehensive conclusions still requires a series of taxonomic studies and analyses of the parasite distribution correlations, particularly in the context of topical and topographic preferences. However, it can be stated that parasites are common in the entire population of Baltic seals and that they exhibit high infestation parameters (total prevalence reaches 100%). As a rule, topographic, or even topical preferences are observed. Therefore, the ectoparasitic *E. horridus* prefer the head region and the anterior portion of the body, *H. halchoeri* mite – upper airways, *D. phocidi* inhabit the hairy skin, particularly in the anterior portion of the body and on the limbs, *Corynosoma* spp. acanthocephalans – selected intestine sections.

Comprehensive parasitological studies of seals enabling determination of the parasite species composition, their status, origin and importance for hosts appear to be of key importance for understanding relationships between marine mammals and parasites and to indicate the factors resulting in imbalances of the parasite-host relationship, leading to deteriorated health and immunity of the seals and development of parasitoses. Parasites and pathogens are among the elements that threaten seal populations, particularly as predatory animals they may obtain parasites by alimentary route, and, as the final component of the trophic pyramid, may accumulate their considerable amounts, both in quantitative as well as qualitative terms. In this context, the helminth fauna of *H. grypus* is dominated by Anisakidae nematodes and *Corynosoma* acanthocephalans.