

## C02-P03

### PARASITES OF SHORTHORN SCULPIN (*MYOXOCEPHALUS SCORPIUS*) IN LITTORAL MARINE HABITATS OF SVALBARD

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Shorthorn sculpins (*Myoxocephalus scorpius*) inhabit all marine littoral habitats in Svalbard and are the most common demersal fish on many localities. Given its abundance, the Shorthorn sculpin plays important role as a definitive as well as an intermediate host in many life cycles of various parasites.

During 2009 – 2014 midnight sun seasons, the parasites of the Shorthorn sculpin were intensively examined in the central part of Svalbard archipelago, in Billefjorden area. In total, 598 specimens were dissected and checked for two main groups of parasites; i.e., protists and helminths.

Gills of the Shorthorn sculpins were often infested with trichodinid ciliates (Alveolata: Ciliophora) and less frequently with *Ichthyobodo* sp. (Excavata: Kinetoplastida: Prokinetoplastida). Their pathogenic potential is, however, apparently insignificant. These parasites have direct life cycles and are not specific for the Shorthorn sculpins. A much higher host specificity and more significant impact on host were revealed among myxosporean parasites. Five species of myxosporeans were found: *Ceratomyxa porrecta*, *Myxidium gadi*, *M. finmarchicum*, *Sinuolinea arctica* and a hitherto undescribed species of *Sphaerospora* occurring in internal organs (gall bladder, urine bladder and kidney). The gall bladder was revealed also as a site of an infection of *Glugea* sp. (Microsporidia). In intestines and stomachs, there were found *Diplocotyle olrikii* (Cestoda: Spathebothriidea), *Podocotyle atomon* (Trematoda: Opecoelidae) and hemiurid flukes (Trematoda: Hemiuridae). Proceroid larvae of *Pyramicocephalus phocarum* (Cestoda: Diphyllbothriidea) were also recorded. Nematode larvae belonging to species complexes of genera *Anisakis*, *Pseudoterranova* and *Contracaecum* (Nematoda: Anisakidae) were frequently found in the Shorthorn sculpin as well as in other demersal fishes in the Billefjorden area. An unidentified microorganism causing gross pathological changes on gills and resembling mesomycetozoan parasites was also recorded in high prevalence.

The Shorthorn sculpin harbours a broad spectrum of parasites in Svalbard and therefore is an important part in many life cycles of parasites in Arctic marine littoral habitats. A declining of polar cod (*Boreogadus saida*) stocks in Arctic Ocean leads to changes in the food web and the Shorthorn sculpin is replacing the polar cod as a prey for some predators. New links among hosts and parasites are possible as well as changes in life cycles themselves and host-parasites dynamics.

Some of the parasites of the Shorthorn sculpin fulfil criteria for use as biological tags in host population studies or indicators of some environmental changes. More detailed study of these parasites is necessary for their efficient use as tags or indicators.

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