

Prosorhynchoides borealis Bartoli, Gibson & Bray, 2006 (Digenea: Bucephalidae) cercariae from *Abra prismatica* (Mollusca: Bivalvia) in Icelandic waters

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Abstract

This paper reports the adult stage of *Prosorhynchoides borealis* (Digenea) from *Lophius piscatorius* in Icelandic waters and infections with the larval stages (sporocysts and cercariae) found for the first time in the bivalve *Abra prismatica* (Semelidae). The previously known first intermediate host was *Abra alba* (Semelidae). Ribosomal DNA sequencing studies on all three life stages of the parasite (cercariae, metacercariae, adults) were performed to confirm their identities. Morphometric measurements confirmed that the adult worms belong to the newly described species *P. borealis*. *Prosorhynchoides borealis* sporocysts filled with cercariae were found in 16% of *A. prismatica* bivalves sampled at depths between 34 and 93 m off South Iceland. Prevalence ranged from 0 to 44% between different localities. The parasite was found only in the larger bivalves. Extensive sporocyst infection in the haemocoel of the foot caused mechanical muscle damage with subsequent degeneration and necrosis. Other tissues, including the digestive gland, nephridia, gills and intestine, were less heavily infected. Only focal necrosis was observed in the digestive gland, nephridia and gills, and local atrophy in the intestine. Cercariae were also observed in the lumen of both the stomach and intestine. This is the first report of *A. prismatica* as an alternative first intermediate host for *P. borealis*. Ribosomal DNA sequence data reveals 100% homology in the data between cercariae, metacercariae and adult digeneans, supporting the morphological data suggesting that all stages belong to the same species.

Introduction

Prosorhynchoides gracilescens (Rudolphi, 1819) (syn. *Bucephaloides gracilescens*) belongs to the family Bucephalidae within the subclass Digenea. Recently the species was divided into *P. borealis* Bartoli, Gibson & Bray, 2006

and *P. gracilescens* (*sensu stricto*) for the North-East Atlantic and the Mediterranean forms of the parasite, respectively (Bartoli *et al.*, 2006). The only hitherto known first intermediate host of *P. gracilescens* (*sensu lato*) is the white furrow shell *Abra alba* (Wood, 1802) (Bivalvia: Semelidae), in which infective cercariae develop within sporocyst tubules (Matthews, 1974). Definitive hosts of *P. gracilescens* (*s. l.*) are angler fish (*Lophius piscatorius* Linnaeus and *L. budegassa* Spinola) in which adult

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