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Short Communication

***DEROGENES VARICUS* (MÜLLER, 1784) FROM CHAETOGNATHS
(CHAETOGNATHA) CAUGHT IN KONGSFJORDEN,
WEST SPITSBERGEN**

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Abstract

The present paper reports another occurrence of the parasite *Derogenes varicus* in chaetognaths. This paper supports the opinion that metacercariae in chaetognaths may be progenetic, as evidenced by egg production.

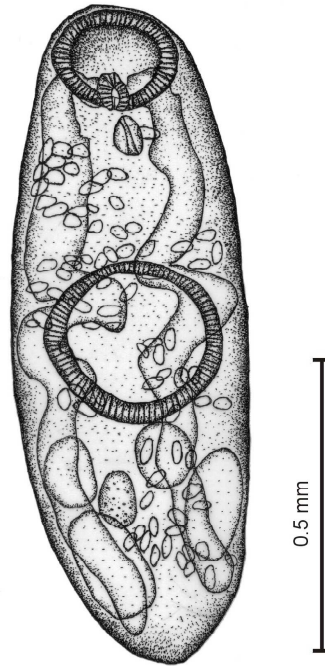


Fig. 1. General view of *Derogenes varicus*. Scale bar =0.5 mm

An individual of the fluke *Derogenes varicus* (Müller, 1784) (Fig. 1) was found in a chaetognath, not identified to species, from a zooplankton sample collected in 2002 in Kongsfjorden (West Spitsbergen). The parasite was preserved in 4% formalin; prior to identification it was stained in borax carmine, dehydrated in glacial acetic acid and cleared in benzyl alcohol. Once the parasite was examined and measured, it was transferred to 70% ethanol.

The elongated fluke measured 1.148 mm in length and 0.445 mm in maximum width; oral sucker oval, 0.168 x 0.234 mm; pharynx elongated, 0.062 x 0.051 mm; intestinal bifurcation at the pharynx level. Caeca terminate beyond vitellines. Genital atrium just posterior to oral sucker. Acetabulum oval, larger than oral sucker, 0.339 x 0.321 mm, situated at mid-body. Oral to ventral sucker ratio 0.495:0.729 mm. Ovary almost spherical, situated beyond testes, 0.124 x 0.066 mm. Testes oval, sub-parallel. Anterior testis 0.139 x 0.073 mm; posterior testis 0.139 x 0.109 mm. Vitellines symmetrical, egg-shaped, situated beyond testes; anterior vitelline 0.183 x 0.095 mm; posterior vitelline 0.204 x

0.131 mm. Uterus extending from posterior end of pharynx to ends of intestine. Egg dimensions (as measured on 5 specimens): 0.051-0.058 x 0.022-0.037 mm.

Derogenes varicus is a widespread parasite found in moderate, subarctic, Antarctic and sub-Antarctic waters. It was recorded in more than 100 teleost fish species, mainly marine and occasionally freshwater and migratory (Skryabin 1957, Polyanskii 1966, Gibson 1996, Zdzitowiecki 1997, Zander and Reimer 2002). The fluke's life cycle involves gastropods of the genus *Natica*, as hosts of parthenites, and crustaceans, primarily copepods, as intermediate hosts. Both the parthenite hosts and the intermediate ones are known from the northern hemisphere only. In addition, the life cycle involves small fish (e.g. gobies) which act as transport or paratenic hosts (Koie 1979, Zdzitowiecki 1997). The Chaetognatha, occasionally regarded as paratenic hosts as well, may become infected with *D. varicus* while feeding on metacercariae-infected copepods (Dollfus 1954, 1960). When in chaetognaths, metacercariae may be progenetic, as evidenced by eggs production (Zaika and Kolesnikov 1967); this is confirmed by the present finding of *D. varicus*. Progenetic metacercariae were also found in the crab *Pagurus pubescens* (Uspenskaya 1960) and in the parasitic copepod *Lernaecocera lusci* (Dollfus 1954). In addition, Overstreet and Hochberg (1975) reported finding mature *D. varicus* in the cuttlefish *Sepia officinalis*.

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