



## Anterior muscular system of the dwarf ectoparasitic male *Scolelepis laoncola* (Tzetlin, 1985) (Polychaeta, Spionidae)

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### Abstract

The muscular system of the dwarf ectoparasitic male of *Scolelepis laoncola* (Tzetlin, 1985) was reconstructed by Falloidin-TRITC technique and confocal scanning microscopy. The anterior part of the male penetrates the female. All four main longitudinal muscle strands of the male's body enter the female; they are twisted about 90°. Oblique muscle fibers form a pear-shaped structure; they are very similar to the peristomial muscles in *Prionospio cirrifera* Wirèn. The well-developed musculature of the virtually immobile parasitic male of *S. laoncola* indicates good swimming abilities of juvenile males at the presettlement stage of the free-living larva.

**Key words:** dwarf male, morphology, sexual dimorphism, Spionidae, Polychaeta

### Introduction

Dwarf males parasitizing females of *Scolelepis laoncola* (Spionidae, Polychaeta) represent an extreme type of sexual dimorphism (Vortsepneva et al. 2008). The external morphology of the male differs considerably from that of typical spionid polychaetes. In this species, the male is an oligomeric achaetous worm attached to the dorsal side of the female; a female sometimes carries more than one male. The head region of the male is modified and lacks both palps and nuchal organs. The anterior part of the male's body penetrates the body cavity of the female. This type of interrelation between a male and female has never previously been found in the Polychaeta. Except for the nervous system, all of the male's organs (digestive tract, nephridia, body cavity, and blood vessels) are well developed. The nervous system is reduced and exhibits characteristics of both the larval and adult nervous system. Furthermore, the ventral nerve cord turns above the contact zone, which is unique for Polychaeta (Vortsepneva et al., this volume). The structure of the anterior part of the male's body inside the female's body is unclear. The intestinal lumen of the male is extremely narrow; the ciliary epithelium has numerous vacuoles and the intestinal wall contains blood vessels and myofilaments. The epidermal tissues of the male and female are highly integrated in the contact area. The contact zone contains numerous myofilaments, blood vessels, and vacuolated cells (Vortsepneva et al. 2008), but is free of the male's nerves. This previously observed peculiarity stimulated our recent studies of the muscular system of the anterior region of the male. The details of the muscular system are presented here.