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What is a Myzostomid and Who Cares Anyway?

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Poster Presentation 2

WHAT IS A MYZOSTOMID AND WHO CARES ANYWAY?

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Myzostomids are a group of marine worms symbiotic with crinoids (relatives of sea stars) that have historically been included in the phylum Annelida, which also contains other marine worms, earthworms, and leeches. Recent work by Eeckhaut *et al.* (2000), however, suggests that these worms are not evolutionarily closely related to annelids. This hypothesis is based primarily on the dissimilarity of myzostomids genetic sequences to those of annelid species. Further, Eeckhaut (1997) excludes myzostomids from the Annelida because he believes that they lack a distinct cell-lined internal body cavity called a coelom—a defining characteristic of annelids. In contrast, a review of the classical literature on the morphology and development of myzostomids shows that these animals have a body cavity associated with the gonad that is lined by cells and that develops similarity to coelomic cavities in annelids. The work presented here reexamines the morphology of myzostomids with the intention of confirming the presence or absence of a coelom. Sections were taken from a myzostomid worm that had been prepared using standard methods (Balser and Ruppert, 1993) for light and electron microscopy. Morphological evidence of the presence of a coelomic cavity includes the presence of a cell layer lining a fluid-filled body cavity. This cellular lining consists of epithelial cells possessing an anterior hair-like projection called a cilium, cellular junctions interconnecting adjacent cells, and a connective tissue layer on which the cell rest. Photographic evidence will be presented to answer the question about the presence or absence of a coelom in myzostomids and relationship between myzostomids and annelids will be reevaluated.